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INJURIES AND DISEASES IN AUSTRALIA ATTRIBUTABLE TO ANIMALS (INSECTS EXCEPTED).

SERIES V: MAMMALS, FISH, SPIDERS, MITES AND TICKS ET CETERA, SHELL FISH, SPONGES, PROTOZOA.[1]

By J. BURTON CLELAND, M.D.,
Marks Professor of Pathology, University of Adelaide.

INJURIES INFLICTED BY AUSTRALIAN ABORIGINES.

THERE seem to be very few medical records of the nature and extent of wounds inflicted by Australian aborigines on each other or on white men with spears, boomerangs, waddies or stone knives.

Native Wound from Waddy.

Dr. W. H. Leigh,[(1)] in 1837, attended at Encounter Bay, South Australia, a native who had been injured by a waddy. The temporal artery had been severed and the bone depressed. Leigh raised the bone. Next day the patient was seen chattering and laying down the law with a whale entrail tied over the wound.

Spear Wounds by Natives.

Members of F. R. George's[(2)] expedition to the south-western portions of the Northern Territory were attacked by natives near Ruined Rampart on December 6, 1906. Hall had a barbed spear imbedded near his eye, the barb being out of sight. The eyelid had to be cut with a razor to release it. Fabian was apparently speared in the left side and had severe pain and difficulty in breathing, but was out of danger in four days.

INJURIES FROM MAMMALS.

Bite by a Rat.

A newspaper reference from Melbourne in June, 1935, states that a large rat attacked an infant three months old, who was sleeping in a perambulator in her parents' bedroom.

The rat had climbed into the perambulator. The child's screams awoke the mother, who switched on the light, and while she was attempting to pacify the baby the rat bit her again. Blood was streaming from bites on the nose, the tip of the tongue and the arms. The rat was chased and killed.

I have seen the ears and nose of a corpse found on the floor and probably dead for two or three days nibbled as if by rats; so they may quite well be expected occasionally, if other food is not available, to attempt to feed on a quiescent human being.

Illness from Eating Seal.

Dr. W. H. Leigh[(1)] in 1837 gives the following reference to illness from eating seal from Encounter Bay or Kangaroo Island.

Fatal consequences often ensue from their [the natives'] feasting on seal, especially the lion white seal, the flesh of which kills dogs in twenty minutes, and is not to be eaten with impunity by any until it is quite putrid, when, they say, it is harmless. I myself have eaten the black hair seal . . . but it was a young one. . . .

[1] The first article of this series appeared in *The Australasian Medical Gazette* for September 14 and 21, 1912. In 1915 additional examples were published in the Sixth Report of the Government Bureau of Microbiology, Department of Public Health, New South Wales (page 270). The third series appeared in THE MEDICAL JOURNAL OF AUSTRALIA of October 4, 1924, at page 339, and the fourth in the same journal of January 30, 1932, at page 157. Since the last publication ten years ago, the following additions have been collected.

Injuries from Kangaroos.

Dr. W. T. J. Harris, of Randwick, New South Wales, has kindly supplied the following account of an attack by a pet kangaroo on Sergeant S. in August, 1933:

The son of the owner of the kangaroo, aged about twelve, and two friends were playing with a revolver when it exploded, wounding the son, who staggered and fell on the lawn. Sergeant S. lived next door, and realising that something was wrong, tried to go to the boy's assistance, but was at once attacked by the kangaroo, which came straight at him and with its front paws on his chest, tried to rip him with its back paws. The Sergeant put his arms round the kangaroo and tried to squeeze it close to his body to stop its rip, but was not successful until others came to his assistance. His injuries consisted of linear lacerations to the face, both arms, both thighs and the abdomen. The lacerations on the arms and thighs were much deeper than the facial injuries, but in only two places was the skin actually perforated. The three linear lacerations on the lower part of the abdominal wall were fairly deep. The clothes were ruined. Mr. K., a visitor to the house who knew the animal, had been attacked on a previous occasion, receiving lacerations to the arms and legs. Both Sergeant S. and Mr. K. stated that the kangaroo ripped with its back paws, the tail holding the weight of the body and the front paws steadying it. The kangaroo was sent away to Goulburn, where it attacked its keeper and had to be shot.

A newspaper reference in November, 1933, describes how near Cleve, South Australia, a kangaroo, apparently blinded by the lights of a motor car, jumped through the windscreen into the vehicle, inflicting before it hopped out again a gash on the face of a child, aged two years, and scratching the driver.

Another newspaper reference describes an exhibit consisting of an old blucher boot with a kangaroo tooth piercing the instep. A Penola (South Australia) boy, aged sixteen years, had been hunting kangaroos. His dogs ran one down and the lad put his foot in the animal's jaws to deal with it. The kangaroo closed its jaws, a tooth piercing the leather of the boot and snapping off. The boy had to use crutches for two months.

Bite of the Yellow-Bellied Flying Phalanger (Petaurus australis Shaw).

C. W. Brazenor,[4] of Melbourne, in field notes on the yellow-bellied flying phalanger, states that although the bite is deep and like that of *Petaurus breviceps* (the lesser flying phalanger) very painful, little attempt is made to use the teeth unless the animal is deliberately annoyed.

The Venom of the Platypus.

In the first paper of this series, a passing reference was made to the "Poison of the Platypus" in "Researches in Australian Venoms" (1906) by the late Dr. Frank Tidswell.[3] As this work is now rare and not readily accessible, it seems advisable to quote here the references to cases of injury to man from this venom that Tidswell has summarized. Tidswell describes some experiments that Dr. C. J. (later Sir Charles) Martin and himself carried out on rabbits with the venom, and also gives references to descriptions of the venomous spur and speculations from various publications as to the use of the venom. The references to actual injuries are as follows:

1817: Sir John Jamison (not Jamieson, as given): *Transactions of the Linnean Society*, March 18.

1869: "The Poison of the Platypus", *Australian Journal of Education*, Sydney.

1876: Spicer: "On the Effects of Wounds Inflicted by the Spurs of the Platypus", *Papers and Proceedings and Report of the Royal Society of Tasmania*, page 152.

1894: Professor (later Sir) T. P. Anderson Stuart: Anniversary Address of the President, Royal Society of New South Wales, page 5. He quotes Jamison's and Spicer's cases and quotes information given to him about the effects of the venom on dogs.

1894: Dr. Lalor: *British Medical Journal*, June 16, page 1332 (extract of paper read to the Victorian Branch).

Dr. W. Kent Hughes,[5] in 1931, in a letter to The Medical Journal of Australia, gave an account of a boy who caught a platypus when fishing in the Yarra and was wounded by its hind claws in two places on the hand. When the patient was examined twenty minutes later, the hand was swollen, tense and hot, and the forearm up to the elbow moderately so. The victim said that just after the punctures had been sustained, the hand in the vicinity of the punctures became quite numb. No bleeding occurred. He had a restless night and in the morning complained of a dull pain in the epigastrium; some swelling of the hand and forearm was still present, and a slightly swollen gland could be felt in the axilla.

In another letter[6] later Dr. W. Kent Hughes quoted a description by J. W. Rusden, in 1874, of a native who was wounded in the wrist from the hind feet of a dying platypus. He felt faint and had to rest. Within an hour swelling was present round the puncture areas. The arm, especially the shoulder, was much swollen for many days, and the swelling of the gland was so painful as to render the arm useless for some time, though it eventually recovered. Dr. Thompson, then of the Walter and Eliza Hall Institute, had informed Kent Hughes that the animal strikes only when its ventral surface is irritated.

Dr. C. H. Kellaway and Dr. D. H. Le Messurier,[7] in 1935, gave an account of experiments with the secretion of the crural gland from which the poison is extruded when the spur is erected to the striking position. The poison resembles a very feebly toxic viperine venom. It possesses weak coagulant, hæmolytic and cytolytic powers, but has no specific neurotoxic action. Its main effect when injected intravenously is to cause a fall of blood pressure due to vasodilatation of peripheral origin. In addition to Dr. Tidswell's cases reported in 1906 and the two recorded by Kent Hughes in 1931, Dr. Kellaway had met with a case. The symptoms were similar in all cases—severe pain, shock, and swelling of the wound and neighbouring parts.

Injuries from Birds.

Injuries to a man from Australian magpies (*Gymnorhina*) have been recorded in previous numbers of this series. Dr. J. W. Yeatman has told me of a magpie in the Auburn district (South Australia) which attacked a horse that was being ridden. In spite of the rider's beating at the bird with a stick, both the horse's eyes were destroyed and it had to be shot.

Injuries from Crocodiles.

Injury from the Bite of the Freshwater Crocodile (Crocodilus johnstoni).

Crocodilus johnstoni is a small crocodile, up to six feet in length, found in freshwater rivers and pools in northern Australia. It does not attack man and lives on fish. J. R. B. Love,[8] in "Stone-age Bushmen of To-day", describes how the natives of Port George the Fourth in the north-west of Western Australia hunt this small crocodile by diving for it, swimming after it beneath the surface "and seizing it in the hands—a way of hunting that calls for great skill and courage". On one occasion a native, Balamia by name, "had dived and attempted to seize the crocodile behind the head in the proper way, but the crocodile seized first, and got Balamia's head in his jaws. He came to the surface, with the crocodile holding on." The other men leaped to his rescue and killed the crocodile. The top of Balamia's head was ripped by several long gashes, his nose was split, and his chin and throat were badly lacerated. He recovered, though with a hideously disfigured face. He died later, it was supposed from the bite of a brown snake, having vomited for eighteen hours before he died.

Injuries and Ill Effects from Fish.

Attacks by Sharks and Stingrays.

Dr. Victor Coppleson,[9] in 1933, in a paper on shark attacks in Australian waters, gave a most interesting and full account with illustrations of such occurrences, reviewing previous records and giving full details of a number of further examples together with general remarks on the subject.

The Report of the Shark Menace Advisory Committee on Suggested Methods of Protecting Bathers from Shark Attack[10] is a valuable document on the subject and contains a list of shark attacks on surfers and others with the date and the time of day when the attacks occurred, and another list of recent attacks in Australian waters.

Dr. F. C. Crossle,[11] of Bulli, New South Wales, in 1935 gave an account of a shark attack. The victim was a young man, who, on February 14, 1935, whilst "shooting a breaker" at Austinmer, felt a sharp pain in his right groin. Examination revealed that the main wound consisted of a long laceration on the inner aspect of the right thigh, which severed the long saphenous vein, lacerated the pectineus, *adductor longus* and sartorius muscles, and exposed the femoral artery. In spite of its being filled with sand, the wound healed without complication.

Mr. G. P. Whitley,[12] ichthyologist to the Australian Museum, in "Fishes of Australia" (1940), deals with the sharks and stingrays. He gives a general account of shark attacks (pages 13 to 21) and reproduces a photograph of a Thursday Islander whose head was bitten by a shark, but who survived. In Appendix A (pages 259 to 265) he gives a chronological list of shark tragedies and attacks in Australian waters. He also gives short accounts (pages 197 to 199) of several injuries received from stingrays, and quotes descriptions of the sting and of its associated venom glands.

Injuries from Stingrays.

J. R. B. Love,[13] writing of the neighbourhood of Port George the Fourth in the north-west of Western Australia, mentions the terrible wounds that may be produced when the stingray lashes out its tail like a whip with its slime-covered poisonous barb when disturbed on the mud in cloudy water. He has known a man to die from a wound in the thigh, but does not state whether this was due to secondary infection or to the direct effects of the injury. Another native, wounded in the ankle, took many weeks to recover from the (secondary) poisoning.

I am indebted to Dr. Michael Kelly, formerly of Bunbury, Western Australia, for the following account of perforation of the leg by the tail of a stingray, the wounds healing readily:

P.K., a young Greek fisherman, was attacked on April 23, 1934, by a 10 foot stingray which had become entangled in his net. Its tail transfixed his leg and was withdrawn in a flash. On examination a vertical wound 7 inches long was found on the outer side of his right leg just above the ankle, and a similar wound 4 inches long on the inner side. The wounds were exactly parallel, and both exactly in the sagittal plane. No other wounds were found. The stingray's tail apparently had entered on the outer side, perforated the interosseous membrane and emerged on the inner side. It passed in front of the fibula and behind the tibia. The wounds healed, though not by first intention, without any serious complications.

Chronic Traumatic Ulcer on the Ankle following a Bite by a Kingfish.

Dr. F. C. Florance,[14] at a meeting of the New South Wales Branch of the British Medical Association on June 17, 1937, showed a patient, a diver, who had been bitten on the ankle by a kingfish seven months previously at Darwin. At the time of his admission to hospital he was suffering from an ulcer 6·0 by 2·0 centimetres in size, which healed completely after four applications of Unna's paste at intervals of one week.

Bite of the Green Eel (Verdithorax prasinus).

G. P. Whitley,[15] writing of the green eel, which hides in the crevices between rocks in the Sydney district, says that it can bite very savagely, and many people have had nasty wounds inflicted by these eels.

Illness following Tasting of a Stink-Fish (Callionymus calauropomus).

In *The Advertiser* of August 18, 1926, is a short account of the illness of some Italians at Port Wakefield, South Australia. After eating a stink-fish, though they only tasted it and then spat it out owing to its bitter flavour, they were ill all day. The account stated that even sea-gulls would not touch the fish.

Poisoning from Eating the Chinaman Fish (Paradicichthys venenatus).

The late Lieutenant W. E. J. Paradice,[16] after whom the *Paradicichthys venenatus* was named, in 1924 described ill-effects following the eating of this fish. The fish, which is figured, is a large one, weighing up to nine kilograms (20 pounds), and is met with along the Great Barrier Reef. It can usually be eaten with impunity, but in certain cases, independent of the time of year, it is poisonous. The symptoms are pain in the joints and abdomen, diarrhœa and perhaps vomiting. Dr. P. S. Clark, of Cairns, has treated a number of patients, and on one occasion a whole family was severely poisoned.

G. P. Whitley,[17] in 1932, in *The Australian Museum Magazine*, gave an excellent account with illustrations of the Chinaman fish. After quoting Lieutenant Paradice's account, he gave a summary of information supplied to him by Dr. Clark, with the following summary of the symptomatology by the latter:

The symptoms of poisoning by the Chinaman Fish vary in direct proportion to the quantity of the fish eaten and to the body weight of the patient. The symptoms usually commence within a few hours of the meal, and in a mild attack will continue for twenty-four hours, in a severe attack for seven days. They closely resemble those of an attack of gastro-enteritis, with, in addition, severe pains, tenderness and sometimes cramps in the skeletal muscles. Nausea, vomiting and abdominal pain are the first symptoms to appear, and these are soon followed by acute diarrhœa and skeletal muscular pains. In a severe attack, the temperature rises within twenty-four hours of the onset to 103° F., and the pulse rate to 110 to the minute. After a few days the temperature gradually subsides. There is loss of appetite, and thirst is a prominent symptom. The mental condition of the patient is one of irritability, and the muscle pains cause insomnia. Headache is a constant symptom. There are no characteristic changes in the blood; the blood count remains normal and there is no rapid destruction of the red cells. Loss of weight continues during the course of the complaint. The tenderness and pains in the skeletal muscles are the last of the troublesome symptoms to disappear. When these terminate, convalescence is rapid. The prognosis of this complaint is a good one; I have not heard of a fatal case.

The treatment of Chinaman Fish poisoning consists mainly of giving an emetic, a large dose of castor oil or Epsom salts being recommended. Later on in the complaint, hypodermic injections of morphia may be required for the insomnia due to the persistent muscular pains. In the convalescent stage, bitter tonics aid in complete recovery.

Sir Raphael Cilento, in writing to Mr. Whitley, stated that some fishermen ascribed the poisonous nature to the liver and others to the kind of food the fish had eaten.

Injuries from Arachnida.

Bites from Spiders.

Dr. W. W. Ingram and Mr. Anthony Musgrave,[18] entomologist to the Australian Museum, Sydney, in 1933, under the title of "Spider Bite (Arachnidism): A Survey of its Occurrence in Australia, with Case Histories", gave an excellent account of bites in Australia by the funnel-web spiders *Atrax robustus* Cambridge, 1877, and *Atrax formidabilis* Rainbow, 1914, and by the red-back spider *Latrodectus hasseltii* Thorell, 1870, including illustrations in colour of *Atrax robustus* and *Latrodectus hasseltii*. A similar paper by these authors with the same illustrations appears in *The Australian Museum Magazine*.[19] The authors point out that little local œdema is associated with these bites, and that the neurotoxic action with collapse is much greater in poisoning by the funnel-web spider than in poisoning by the red-back. Pain is always felt with the latter case and is not complained of in the former case. Treatment consists in applying a tourniquet where possible, incising the bite and releasing fractional doses of the venom from time to time. Where a tourniquet cannot be applied, ichthyol or iodine locally may be of use. Morphine and atropine are indicated in all cases,

allaying the pain in bites by the red-back spider, counteracting anaphylactic manifestations in funnel-web spider bites, and allaying fear and easing laryngeal spasm. Adrenalin and pituitrin should be given with them to combat shock.

Keith C. McKeown, in "More about Spiders" in *Wild Life* (1940), gives a general account with photographs of the habits *et cetera* of the red-back spider and the funnel-web spider.

Bite by Atrax robustus, the Funnel-Web Spider.

Earlier records of bites by the funnel-web spider have been summarized in Series IV and in the papers by Ingram and Musgrave, to which reference has just been made. One case detailed below has been reported since then. The editor of *Wild Life*[32] states that "the dangerous *Atrax* is found only in a very limited area in the Sydney suburbs, with a close relative in a similarly circumscribed habitat in southern coastal Queensland (? northern coastal New South Wales) and has never been recorded from any other part of Australia".

Dr. A. M. Watkins,[33] of Roseville, New South Wales, gives an account of a man, aged fifty-five years, who had been bitten in the terminal phalanx of the left ring finger by this spider. The patient's face was mask-like; the eyes were staring, the pupils dilated and the corners of the mouth drawn up, suggesting *risus sardonicus*, and there was profuse salivation. He was executing short dancing steps, the so-called "tarantism" or hysterical impulse to dance of the Italian writers. He did not complain of pain, but had a salty taste in the mouth. He was put to bed, when the movements ceased. A paste of ammonia and bicarbonate of soda was applied to the bites, hot bottles were placed round the extremities and copious drinks of hot, freshly infused tea were given. In twelve hours he felt well, but he was stiff and sore.

Bites of the Red-Back Spider, Latrodectus hasseltii Thorell.

In Series II and IV a number of examples of bites by the red-backed spider are given. The following are additional samples and references.

In a letter to me in March, 1932, after the publication of Series IV, the late Dr. W. D. K. MacGillivray, of Broken Hill, kindly gave me his experiences and comments as follows:

> The Red-back Spider is common here and during my 30 years' residence I have been called upon to see and treat on an average about six cases *per annum*.
>
> 1. The cases varied from small children to adults of all ages.
>
> 2. The symptoms. Pain radiating from the site of the bite may be slight or very severe, doubtless dependent on the dose injected by the spider. Pain is so severe in some cases as to need ½ gr. of morphia hypodermically to make it bearable, followed by smaller doses. There is never any *local swelling* or reaction, and no pain other than a slight sting felt at the time, comparable to the sting of a mosquito. Locally there is only a slight red mark. Many people have not felt it at all, the pain coming on after a visit to the closet, usually about 20 minutes or half an hour afterwards.
>
> 3. At no time has life been endangered, neither pulse nor respiration being interfered with to any extent.
>
> 4. The neuralgic pain and cold sweating of the extremities last from one week to six and may be very distressing. I have never seen any swelling or subsequent rash as reported by Dr. Hales of Brewarrina.
>
> The case reported to you by Dr. Eric Broadbent of Bordertown seems to me as being due to some introduced micro-organism; it is utterly at variance with all cases that I have seen. Headache does not occur.

Dr. S. Dawkins, then Medical Officer to the South Australian Railways, in August, 1931, kindly gave me the following account of a case on which he had obtained a legal opinion as to a claim for compensation:

> C.H.G., on April 16, 1928, whilst engaged on repairs to a weighbridge, was bitten by a Red-Back Spider. I think there is no doubt that it was a Red-Back Spider, as one of the assistants stated that he saw him remove it from off his clothes, and the spider furthermore was captured and sent to the office in a matchbox. Within a short time he became ill enough to compel him to leave duty, and was taken to the resident surgeon within a quarter of an hour. He remained off duty for five days, and made application for compensation for that loss of time. As this was the first occasion on which application had been made for an employee receiving an insect bite to be given the benefits of the Compensation Acts, it was decided to obtain a legal opinion in this matter, because it will readily be seen it is opening up a new field, and when once the principle is adopted we may even have to pay for bites from ordinary flies, which leave some form of infection in their trail. The opinion was as follows:
>
> > A bite by a spider or other venomous insect or reptile can certainly be an accident within the meaning of the *Workman's Compensation Acts*, but whether it would entitle a workman to compensation depends upon whether it arose out of and in the course of his employment. Here, it certainly arose "in the course" of his employment, and in my opinion it also arose "out of" his employment within the meaning of those words as laid down in fairly recent decisions of the House of Lords, giving a wider meaning to those words than had heretofore been given to them. An accident is now held to arise out of the employment if it arises out of the work the man is employed to do and what is incident to it—in other words, out of the service. In this case it was the man's work in unscrewing plates from a weighbridge which brought him into contact with the spider, and, in my opinion, he is entitled to compensation.
>
> In view of the above advice, the claim was acknowledged.

In 1934, under the caption "Notes and News"[34] in *The Australian Museum Magazine*, appeared a reference to two cases of red-back spider bite from Queensland, the patients being an adult and a small boy. The former, bitten on the arm, was ill for over a week, and suffered from severe pain, nausea and headache for six weeks. The latter was bitten on the neck in his sleep and lost the power of his legs about an hour afterwards. He was taken to hospital, where it was "touch and go with him for three days". Both wounds were lanced and sucked, and in the case of the adult a ligature was applied.

The late Dr. John MacPherson[35] contributed an excellent article on "The Red-striped Spider (*Latrodectus Haseltii*, Thorell)" to *The Australian Zoologist*, Volume VIII, Part 2, June, 1935, page 145. He gave a full description of its markings, its haunts and its habitats, its web, food, cocoons and eggs, and its enemies and toxic effects, the last-named based on a number of cases he had seen at Young, New South Wales. The clinical account is complete and should be consulted.

The following was probably also an example of a bite by the red-back spider, though no red stripe was noticed and the spider is described as "large".

> A man, a wood and iron hand, aged fifty years, living in a suburb of Adelaide, at breakfast on February 5, 1936, suddenly felt a burning pain in his right arm, and a large black spider came out of his shirt and tie. On looking at his arm, he saw a white ring near the tip of the shoulder, one and a half inches (3·7 centimetres) in diameter, and smaller ones lower down on the inside of the arm. He came to the Adelaide Hospital at 11.30 in much pain from his arm. This continued all night, shooting into both legs and being accompanied by "jumpings", and he sweated profusely. The pain eased in twenty-four hours, though he still sweated profusely. He had no appetite and no sleep for two nights, and he felt very weak.

Bite by the Grey Wolf Spider (Lycosa ramosa).

The editor of *Wild Life*[36] records a friend suffering "considerably for more than a week from the bite of a Grey Wolf Spider, though such cases must be very rare. The trapdoor spiders, too, are always suspect, though I know of no really grave cases of bites from them in Australia." The grey wolf spider is figured on page 22 of the same issue of *Wild Life*.

Ticks.

References to the "bites" of the brush tick (*Ixodes holocyclus*) have been given in all the four previous papers of this series. The following additional references have appeared since the last was published.

Dr. F. C. Crosslé,[30] of Bulli, New South Wales, gave an account of a girl, aged two years, who had been quite well before the development of an urticaria that persisted for about six hours. On the next two days she seemed well, but on the third day the mother noticed that her face was twisted. Dr. Crosslé found that she had left facial paralysis, and discovered a dead tick with its head adherent to the bony floor of the external meatus. Recovery, aided by massage, was complete in three weeks.

Dr. W. J. Stewart McKay,[31] in a letter in reply, thought that Dr. Crosslé's tick was not dead when discovered, and discussed the various ways in which the poison might act. He considered it essentially one acting on the vagus.

Professor E. Brumpt,[32] in 1934, recorded "Experimental Fatal Ascending Paralysis of the Dog due to the Bite of the Australian Tick *Ixodes holocyclus*". I have not had access to this publication.

Dr. Stewart McKay,[33] in 1940, in a further letter entitled "Tick Bite and Allergy", referred to the effects on dogs and on children, and considered that the symptoms were due to allergens injected by the tick. The occurrence of vagotonia led to spasm or paresis of the muscles of the gullet, and children also developed sympathicotonia.

Later in the same year, Dr. D. G. Hamilton,[34] Medical Registrar of the Royal Alexandra Hospital for Children, Sydney, under the heading "Tick Paralysis: A Dangerous Disease in Children", gave an excellent account of the symptomatology, with illustrations of the tick, and described seven new cases in children, two ending fatally. The disease consists of a widespread lower motor neurone paralysis. The height of the weakness is reached approximately forty-eight hours after the tick drops off or is removed. Death, when it occurs, is due to respiratory failure or to aspiration pneumonia from careless feeding at the height of the paralysis. Anti-tick serum prepared by the Commonwealth Serum Laboratories from immune dogs should be used at once if available. Large doses of vitamin *B* (especially B_1) may possibly do good and are unlikely to do harm. All other treatment is symptomatic.

Ticks as Transmitters of Rickettsia burneti of "Q" Fever.

The tick *Hæmaphysalis humerosa* Warburton and Nuttall, which has been collected on bandicoots (*Isoodon macrourus* Gould), native species of *Rattus*, the opossum and other native animals, has been proved to be a transmitter of "Q" fever by D. J. W. Smith and E. H. Derrick.[35] The common brown dog tick (*Rhipicephalus sanguineus* Latreille, 1804) has also been shown experimentally by D. J. W. Smith[32] to be capable of transmitting the *Rickettsia* of this fever. Derrick, Smith and Brown[36] have also just reported that *Ixodes holocyclus* Neumann and *Hæmaphysalis bispinosa* Neumann can transmit this virus.

Mites.

Scabies.

Dr. John H. Kelly,[37] at a meeting of the Royal Melbourne Hospital in 1931, showed a child, aged five months, with large inflamed, pus-infected, crusted areas on the arms, legs and body. The characteristic papules of scabies were to be seen on the palms and soles and in the folds about the ankles and axillæ.

A number of cases diagnosed as scabies have occurred in South Australia during the last few years. Some of these have been amongst the natives on aboriginal stations, as well as amongst whites. Difficulty has been experienced in finding the acari, probably owing, as recent publications indicate, to the fact that often only a few mites are present—one to three oviparous females (Major C. G. Johnson[38])—though abundant burrows can be found. Recently Mr. H. Womersley, of the South Australian Museum, located two mites, but only two, on a young woman submitted for examination in Adelaide.

Dermatitis Caused by the Mite Pediculoides ventricosus Newport, 1850.

Before the Medical Sciences Club of South Australia, at a meeting held on July 1, 1932, Dr. (now Professor) James Davidson said that samples of hay received from a district in South Australia, where the workers handling hay and chaff complained of "hay itch", were found to contain *Pediculoides ventricosus* Newport (females only). He pointed out that this mite, which was a parasite on larvæ of the grain-moth and other allied larvæ, had been recorded from various parts of the world as producing an irritating dermatitis amongst workers handling infected hay, chaff *et cetera*. This was the first time the mite had been recorded in South Australia. Dr. Davidson showed specimens of the mite.

Mr. D. C. Swan,[39] entomologist at the Waite Agricultural Research Institute, University of Adelaide, in 1934, gave an excellent account in this journal of the irritation resulting from the accidental infestation of man by this mite as a result of handling hay and chaff in South Australia, more particularly in the autumn. Those interested are referred to this article with its references. Probably numerous cases occur annually in South Australia and doubtless also in the other States.

Dermanyssus avium et gallinæ.

Dr. Herman Lawrence[40] described four cases of intense pruritus due to *Dermanyssus avium et gallinæ*, the infestation being contracted in the patients' own homes, probably from adjacent nests of birds, such as starlings. The pubic region may be specially affected. The mites tend to hide away in the daytime, so the cause may be hard to detect.

Demodex folliculorum.

The late Stanley Hirst, an authority on the mites, informed Dr. W. MacGillivray, of Broken Hill, that he had never failed to find *Demodex folliculorum* on any human face that he had examined. Probably his examinations for this purpose were confined to England. Australian records have been given in Series IV, and are few in number. It would be of interest to make a more systematic search. I have found *Demodex* in acne-like eruptions in Western Australian pigs and have recorded the bovine variety from a New South Wales ox.[37]

Scorpions.

Records of bites by scorpions in Australia are remarkably few, and the direct effects seem mostly trivial. The late Mr. A. M. Lea informed me that at Mount Painter, South Australia, a miner was stung on the thigh by a rather large species with a long tail, and was in consequence incapacitated for three days. No details of the symptoms are available.

At Sydney, in September, 1933, according to a note in *The Australasian Pharmaceutical Notes and News*,[41] a man, aged fifty-six years, died "from tetanus developed from a scorpion bite". The medical evidence showed that he died from tetanus and had suffered from the effects of a bite from a scorpion. No wound was detected anywhere except the scorpion bite on the forearm. The City Coroner returned a verdict of death from tetanus, the origin of which was unknown.

The late Dr. W. MacGillivray considered that the bites of Australian scorpions and centipedes were never serious. He made the following statement:

> They cause swelling, pain and redness at the site of the bite, but pass off with hot fomentations. An old blackfellow queried by myself about the bites of these two creatures replied "Him no matter" to each. When asked about the Red-backed Spider he replied "Him bad-fellow, make'm all paralyse".

Centipedes.

The late Mr. A. M. Lea gave me hearsay information of a boy in Adelaide, in delicate health, who many years ago died the day after he had been bitten by a centipede. The late George Masters, the naturalist of the Macleay Museum in Sydney, told Mr. Lea that he had been bitten near Melbourne by an ordinary centipede (*Scolopendra morsitans*) and that the bite felt like a red-hot needle and raised a fairly large lump. Dr. M. Deland had told him that nearly every year the big centipede of the Solomon Islands caused fatalities, and several cases had come under his notice.

Phylum Mollusca (Shell Fish).

Bites of Cone Shell Fish.

In 1912, in the first article of this series, a number of references to bites by cone fish (*Conus* species) were given, but none of these were Australian. In 1935, off the Queensland coast, a young man died from the effects of the bite or sting of *Conus geographus*. Full accounts of this case with illustrations and references to the subject were contributed to The Medical Journal of Australia by Miss Joyce Allan,[39] assistant conchologist, Australian Museum, and by Dr. H. Flecker, of Cairns.[40] Miss Allan[41] also briefly referred to this case in *The Australian Museum Magazine*, at that time attributing the death to a bite from *Conus textilis*.

Miss Joyce Allan kindly supplied me with the following information, which was obtained from Mr. R. Bruce Jamieson, master of a motor launch that was on the scene at the time. Miss Allan has further stated that prostigmin was suggested as a likely antidote:

The victim of the Cone shell poisoning was scratching the epidermis off a shell, since identified as *Conus geographus* (Dr. Cleland will recall this was the species which poisoned a European woman in Fiji), when the animal apparently shot out its proboscis and discharged a poison dart into the flesh of his hand. Little pain was experienced, however, but about an hour after, when he had returned to the boat from the reef, the victim complained of his eyesight being affected. He gradually became drowsy, a condition explained by the owner of the launch as being very similar to that caused by snake-bite. He was walked about, and attempts made to prevent him from lying down, but as the drowsiness became worse, it was decided to take him to the mainland, a distance of 18 miles, which was covered in about 2½ to 2¾ hours, but by the time the mainland was reached, the patient was in a coma. There appeared to have been no distressing symptoms, beyond the drowsiness and the first pain when the animal struck his hand. The patient was landed at Cannon Valley and taken by, it is understood, an ambulance to Proserpine, but died before he reached the district hospital there. The deceased was in his early twenties.

Mr. Jamieson said he irritated a similar Cone shell himself afterwards, and it discharged a loose sharp-pointed dart, which was transparent and had a small sack filled with yellow matter at the base.

Mr. Jamieson in a letter to me stated that there was a gradually increasing dulness of sight attended by numbness of the jaw muscles extending slowly to the rest of the body. There was very little pain in the region of the sting (the centre of the palm of the hand). His symptoms became alarming about an hour after the sting, though noticeable half an hour earlier. He was semi-conscious and very weak in two and a half hours and completely unconscious in three to three and a half hours, gradually weakening till death about four and a half hours after being stung. His friends told Mr. Jamieson that he had been subject to "turns" without apparent cause, showing much the same symptoms in a lesser degree on two previous occasions, and for this reason little notice was taken of his condition until it became alarming.

Mussel Poisoning.

When Captain Vancouver, nearly a century and a half ago, after leaving King George's Sound in Western Australia, explored the North American Pacific coast, some of his men, on going ashore, roasted mussels and ate them, with disastrous results. The following account of this happening appears in Vancouver's "A Voyage of Discovery to the North Pacific Ocean and Round the World",[42] and, though it does not record an Australian occurrence, it is of interest to us in connexion with Australian exploration by sea, as well as for the researches on the subject carried out recently in Melbourne by Dr. C. H. Kellaway and Dr. Le Messurier.

On June 15, 1793, at latitude 52° 56½', longitude 231° 54', a boat party stopped in a little bay to breakfast, where finding some muscles [sic] a few of the people ate of them roasted as had been their usual practice. Soon after they had quitted the coast several of the crew who had eaten the muscles were seized with a numbness about the face and extremities. Their whole bodies were very shortly affected in the same manner, attended with a sickness and giddiness. Mr. Barrie had when in England experienced a similar disaster from the same cause, and was himself indisposed on the present occasion. Recollecting that he had received great relief by violent perspiration, he took an oar and earnestly advised those who were unwell . . . to use their utmost exertions in pulling an oar to throw themselves into a profuse perspiration.

From this Mr. Barrie received considerable relief; but as soon as the boat landed and their exercise ceased, the three affected seamen had to be carried on shore. One man in the *Chatham's* boat was also affected. They were given warm water to drink. John Carter was the most affected, and every means was adopted to afford him relief, by rubbing his temples and body and applying warm clothes to his stomach. All these efforts proved unavailing, and he died half an hour after he had been landed. He had eaten the mussels about 8 o'clock; at 9 o'clock he first felt unwell, and he died at half-past one. When it was first taken the pulse was regular, though it gradually grew fainter and weaker, until he expired. His lips turned black and his hands, face and neck were much swollen. Mr. Barrie attributed the ill-effects, not to the number of mussels eaten, but to some deleterious quality of some particular ones, which he thought might be those gathered on the sand and not taken from the rocks. He had eaten as many as any of the party and was less affected than the others. The bay was named Carter's Bay after the unfortunate seaman. Poison Cove was the name given to the point where the mussels were eaten, and the branch leading to it was called Muscle Channel.

Dr. C. H. Kellaway,[43] in 1935, after pointing out that so far no cases of mussel poisoning had been recorded in Australia, asked that practitioners along our sea coasts should report to him any cases of illness that might be mild examples of this condition. He states that the poison is similar chemically and in pharmacological activity to the *fugu* poison of Japan, which is derived from the liver and gonads of certain species of *Tetrodon*, to which genus some of our "toado" fishes belong. The symptoms include numbness of the mucous membrane of the mouth, numbness and pricking sensations in the finger tips and toes, incoordination of movements of the limbs, ataxia, incoordination of speech, and sometimes nausèa, vomiting and diarrhœa and a gripping sensation in the throat and respiratory distress. In fatal cases weakness and paresis of the muscles of the neck and limbs occur, with dyspnœa and respiratory failure. Boiling of the mussels in an alkaline fluid destroys the toxicity.

Dr. Kellaway,[44] in a paper entitled "The Action of Mussel Poison on the Nervous System", gives an account of his experimental work with this poison. It is a neurotoxin with both central and peripheral actions. The central effects are predominantly upon the cardio-vascular and respiratory centres and the peripheral effects upon motor and sensory nerve endings. The poison is an extremely potent curarizing agent. In a personal letter to me Dr. Kellaway stated that there was little doubt that mussel poisoning was due to the poisonous nature of the plankton that forms the food supply of mussels at certain times of the year.

Dr. H. Le Messurier,[45] in 1935, published "A Survey of Mussels on a Portion of the Australian Coast". He examined in summer, during the spawning season, the mussels *Mytilus planulatus*, which is used as a food round Port Phillip Bay and Lakes Entrance, and *Modiolus australis*, a smaller bivalve which is not eaten. Watery extracts in acid solution were tested by intraperitoneal injection in white mice. With the Californian mussels highly characteristic symptoms develop, consisting of uneasiness, ataxia and dyspnœa, followed by cessation of respiration and violent convulsive asphyxial springs, the animal falling over on one side and dying after a few terminal gasping respirations. Occasionally paralysis of the hind limbs may occur and the animal may survive. No very clear evidence of the specific Californian mussel poison was detected, though Le Messurier points out that repeated investigations in various seasons would need to be instituted to exclude the likelihood of its occasional presence. No human cases have ever been known in Australia.

The Giant Clam and Divers.

The late Dr. W. MacGillivray, writing to me in 1932, discounted the view about the danger of the giant clam (*Tridacna gigas*) to divers. He wrote as follows:

I have crossed swords with Boardman and Livingstone about this creature and the myth of the diver caught by the leg and drowned by the rising tide. It has its origin somewhere in antiquity. All these clams are very conspicuous objects on the reef and can easily be seen at a distance. No experienced diver would ever think of putting his foot or hand into one unless deliberately. The big ones weigh about a hundredweight and can be seen easily at 100 yards or more. I am sure that there is no case on record in Australian waters of a diver having been trapped by one of these molluscs.

Small Shells and Shell-grit in the Bronchi.

There is a small conical univalve shell, *Barkivia fasciata*, about eight millimetres long, which, I am told by Mr. B. C. Cotton, conchologist to the South Australian Museum, is found alive sparsely distributed, attached to the blades of sea-grass in the "blue-line" off the sandy beaches of the coast near Adelaide. Though living specimens have been rarely secured by collectors, the empty dead shells are washed up in countless thousands by the waves and are left by the receding tide congregated with other shell-grit in pinkish patches, often some yards long and only a foot or so wide, towards high-water mark. The movements of the water act as a concentrating mechanism, the shells themselves being rather light. When a new tide comes in, the zone of these shells and shell-grit is churned up in the peak of the tide, which is always shallow water a few inches only in depth. At the end of March, 1942, a man, aged fifty-one years, was found by a military patrol, partly covered with sand, lying face downwards on one of these beaches. At the autopsy I found the face disfigured by the post-mortem attacks at night of "sea-lice" (*Cirolana*). The larynx, trachea and primary bronchi were nearly stuffed with these small shells and shell-grit, which had evidently been inhaled and had caused death by suffocation. There was an excess of fluid in the pleural cavities, and a quantity of fluid was found in the stomach, suggesting drowning as well. The elucidation of what happened in this case is obscure. The victim had a large and somewhat cirrhotic liver, so may have been in ill health. For some days previously he had left home each day, ostensibly to go to work, but had not turned up where he was employed. His hat and coat were found on the sand about three miles from where the body was found, but in conformity with the set of the tides. From these circumstances, and from the fact that the water on these beaches shelves only gradually, it seems unlikely that his immersion was accidental, and there is no reason to postulate foul play. The situation of the shells and shell-grit in the bronchi as well as the trachea indicates that he must have been alive and at least gasping when he was at the very edge of the tide, in a situation where the waves were churning up the patches of shell-grit and receding to leave practically bare sand. If so, why could he not extricate himself from his perilous position? Had he attempted to drown himself in water perhaps breast-high and been carried in, partly conscious but gasping, to roll about in the churned-up grit? He could hardly have made the attempt initially in this situation. Had he taken a drug or drink, not necessarily to end his life, and became unconscious on the banks of seaweed, to be overtaken in the end by the rising tide? Or finally—a suggestion made by Mr. Cotton—was he sleeping in the seaweed with his mouth open, and did some practical joker fill it with a handful of grit, unwitting of the danger, and then leave precipitately? We shall never know; but I shall be grateful for any reasonable explanation of the findings at the autopsy.

Phylum Porifera.

Irritation from the Spicules of a Fresh-Water Sponge.

A fresh-water sponge (probably *Ephydatia* species, family Spongillidæ), called by the natives "*pipera-coora*", is common in the beds of water courses in the central parts of Australia, such as the north-west of South Australia. Mr. L. Reese, then of Minnie Downs near the Diamantina in that State, has told me that if the sponge is handled, when either wet or dry, it makes the skin itch, and if contact is made with it when swimming it leaves a red patch like a burn lasting for an hour or two. The irritation is evidently due to the siliceous spicules forming the framework of the sponge.

Phylum Coelenterata.

The Portuguese Man-O'-War or Blue-Bottle (Physalia pelagica).

A newspaper reference occurred in January, 1937, to the death of a young man, aged nineteen years, who was waist deep in water at Branston near Cairns when a blue-bottle wrapped itself round his abdomen. His companion assisted him ashore; but after going a few yards he collapsed and died.

Phylum Echinodermata.

Injuries from Echinoids (Sea-Eggs).

Though they are beyond the limits of the Australian region, attention may be called to an article on "Echinoderm Injuries in Nauru", by Dr. K. Vigors Earle,[46] in 1941. The paper deals with injuries from spines of the sea-urchin *Centrechinus setosus*, which is illustrated Two cases are described.

Protozoa.

Trichomonas vaginalis.

Dr. E. A. Woodward,[47] of Grafton, New South Wales, describes the case of a girl, aged nineteen years, who had vulvitis and vaginitis with a red, hot, swollen mucous membrane and a profuse creamy discharge. Numerous shallow ulcers that came and went rapidly, like those of aphthous stomatitis, were present on the cervix. Eventually it was found that Trichomonads were numerous in the discharge and apparently responsible for the condition.

Dr. R. Francis Matters,[48] in 1940, discussed the treatment of infection with this protozoon. He found insufflation into the vagina with silver picrate powder the most successful method, and referred to seven other methods.

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SOME ASPECTS OF MEDICAL DISEASE CONFRONTING US IN OUR WAR WITH JAPAN.[1]

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"Destinies of mankind have been often altered by battle or conquest, but how often at the onset of battle have the limits of a conquest been decided by disease among the contestants?" This is a comment by Kilduffe, writing in *The Military Surgeon* on the topic of disease and destiny.

I have wondered—it may not be so—whether since the occupation of Malaya and Java the Japanese invaders are having a strenuous time with the malarial foe. If we bear in mind our calamitous loss of these territories, and our inability to import quinine, then truly it may be said that from our point of view the war in the north will be a medical war. In this short paper an attempt will be made to refer briefly to three broad aspects of this problem: (i) maintenance of the health of the Army and of the civil population; (ii) nutritional problems associated with food rationing, which surely must come; (iii) diseases the outbreak of which in epidemic form must be watched for and guarded against.

The Maintenance of Health.

Benefiting from the lessons of the last war, at the beginning of this one we created manpower boards to prevent an undue loss of skilled artisans from the industrial front and commercial services into the Army. We created medical coordination committees to reallot medical personnel. When the absorption of men and women into the fighting Services has reached its saturation point, we shall have a fighting force which has been carefully examined and of which a mass radiographic survey has been made. The emphasis will, I hope, then shift from an efficient Army medical service, taking care of its personnel, to the need of promoting the health of the civilian worker.

It is just as necessary to have healthy trained skilled labourers in industry as in the Army. Why do we waste time training many munition workers who are physically unfit?

I have in mind an electrician who had been working long hours, not having had time to have an X-ray examination, which had been ordered by his doctor. Finally, when he became too ill to work, his deferred visit to the hospital for X-ray examination proved to be a transfer to a sanatorium.

There is need for careful extension of mass radiography to all young adolescents in industry. If the industrial machine is to be an efficient one, the men and women who run the machines must be comparably efficient. Such a conception of health in our civilian community will call for extension of governmental medical services to all war workers in factories manufacturing not only weapons but clothing and food. It is questionable whether the increased wages earned by factory workers in comparison with those of the Forces are sufficient compensation to make up for the absence of medical care and of pensions which become the right of personnel in the fighting Forces.

The Army needs a constant supply of efficient men. The medical problem is to exclude early those men who are deficient mentally, those men who are not suitable owing to poor mental make-up, those who are proved dyspeptics, or those who do not fulfil the criteria of Classes I and II. The process of exclusion reveals many interesting problems and also indicates many diversities of view.

The class of men comprising the mentally unsuitable and the mentally deficient come under review when they visit the recruiting centre for the first time. Here it may be too much to expect the examining doctor to do more than eliminate a few obviously unsuitable types and also a few mentally subnormal types. But it falls to the medical officer of the training battalion to give competent medical service in sorting out the unsuitable and discharging as constitutionally unfit the "amusing old soldier type", referred to by Parkinson, of Sydney. Some men prove to be military misfits. It would seem better to return these to civilian occupations with wartime bearing than to relegate them to labour battalions. Medical officers should be given lectures by good psychiatrists on the main features of the candidate with a predisposition to neurosis. It has been found that in 75% of cases of neurosis predisposing causes may be elicited, and by far the greater numbers of such people are of the intelligent type. They have poor family histories and many have had previous breakdowns.

[1] Read at a meeting of the Western Australian Branch of the British Medical Association on June 17, 1942.

In England, the two functional disorders of the nervous system and of the heart rank first in order of pensions, and 29,000 out of 66,000 persons granted pensions in 1918 were in 1938 still drawing them.

The job is to eliminate by diligent search and by careful weeding out the mentally unstable before they become actively trained, only to break down and require long periods in hospital and the payment of pensions. Fortunately, the cardio-vascular neuroses appear to be infrequent. The medical officer must nip in the bud such cases when men exhibit cardiac symptoms due to excitement, terror or emotion; he must tell them that they have no cardiac disease. The medical officer who takes a careful family and personal history will reach a clinical diagnosis without elaborate special investigations, thus preventing many psychological casualties. His part-time methods will be those adopted in general practice, rather than those of the hospital ward.

The dyspepsias are responsible for a population of about 10% to 15% in military hospitals treating invalided troops. Most statistical returns show that only 10% of these cases of dyspepsia are of post-enlistment origin. S. F. McDonald, writing in The Medical Journal of Australia of May 16, 1942, at page 576, discusses this problem in an admirable way. His paper should be read by all.

Four questions need to be answered: (i) How can we prevent the large number of dyspeptics from being admitted to general hospitals? (ii) What criteria should we adopt in our method of investigating such cases? (iii) What should we do with men exhibiting active gastro-duodenal symptoms? (iv) What should we do with those who have symptoms, but in whom investigation provides no evidence of a lesion?

It is apparent that medical officers trained in civilian practice are slow to learn to recognize a type of dyspepsia which occurs in young men, who pass abruptly from a sedentary to a strenuous existence, and who suddenly double their food intake. Transient dyspepsia and gastritis should be treated in the units. Further, it is undesirable that such patients should be submitted to a full gastro-enterological investigation. Too many men are being sent to hospitals from units with a diagnosis of dyspepsia for investigation, when most of them do not present the cardinal symptoms and signs of peptic ulceration. We can take risks with men aged under forty years, which may not be justified with men over this age. I refer to the chance of missing cases of malignant disease.

As for those who do come to hospital, and of whom investigation produces negative results, we must see that they do not become a floating population, wandering from one hospital to another with an ever-increasing knowledge of barium meals and the ways of sisters and doctors.

The patient who presents the cardinal symptoms and signs of peptic ulceration is given a barium meal and a test meal; his fæces are tested for occult blood. If an active ulcer is proved to be present, should he be accepted as unfit? The British Army authorities' instructions to presidents of medical boards are as follows: "Cases exhibiting active gastro-duodenal symptoms with proved organic lesions should be recommended to be discharged as permanently unfit for military service." A man with established ulcer cannot stand up to Army life and be efficient. If officers are valuable, it would seem justifiable to return them to home duty, where food arrangements could be made to suit their needs.

Now, what about the large group who have no radiologically revealed ulcer, but who have a long history of symptoms? I think they should be "boarded out", especially if they can fill a good civilian job. When men are returned to their unit, it is essential that details of the findings be sent to the medical officer concerning the probable functional cases in which no lesion was found.

Recently, we have had two healthy men who have developed diabetes. Neither gave any family history. One writer calls it "war diabetes". Can physical and emotional trauma be responsible for its onset in a few predisposed persons?

Men must not be left too long to deteriorate in hospitals, which may prove breeding grounds for neurotic incapacity. Good treatment and rapid improvement in their lot depend on, or are proportional to, a hard-working medical organization.

In our civil practices we examine a man and attempt a diagnosis. With reassurances we send him back to work, with a risk—often a slight risk—that he will come back again, complaining.

We are receiving into hospitals too many patients in whose case no diagnosis has been made or attempted. Often, inconclusive extensive investigations are made to ascertain the nature of a vague pain in the right side. I believe that we are relieving men of responsibility, independence and initiative. There is something to be said for a "swing to the left", when stern advice as to the need for personal responsibility is given.

Nutritional Problems Associated with Food Rationing.

For our people to be "physically tough", they must be well fed. There was hardly time during the last war to estimate from 1917 to 1919 the extent of deterioration of health in Great Britain due to deficient quality of the food provided. We have now a more clear conception of what is required in natural foodstuffs and also of the limitations of synthetic vitamins. If we can guarantee a basic intake of essential foods, we shall have no fears of malnutrition.

In Germany nutrition experts helped in planning the war. Their ration is based on the principle of the peasant diet—wholemeal bread of high extraction, plenty of vegetables and potatoes, dairy produce, cheese or separated milk.

The Army has to be fed.

War deprives the non-combatant of many sources of protective foods and indirectly raises the price of many valuable protective foods, as well as of some body-building foods. We must see that the people are warned and educated, so that if food becomes scarce they may know the way to procure a diet adequate and yet cheap; we must stress the need to divert portion of the money spent on meat to cheese, fish and milk, and to concentrate on the growing of tomatoes, lettuce, potatoes, carrots and sprouts. It is a simple fact to know that in the siege of Madrid the prevalent incidence of glossitis was relieved better by brewer's yeast than by nicotinic acid. Newer methods of drying vegetables will help in the preservation of the foods we need.

Dietetic malnutrition must not be perpetuated by added factors, such as ignorance, bad cooking, fancy and poor gastro-intestinal absorption. We know that poor nutrition leads to certain well-known deficiency diseases. We know that it leads to fatigue and to accidents in factories. Such an observation has prompted certain employers to provide an adequate meal for their workers. The effects of malnutrition are seen in the prevalence of infections, especially among shifting populations with poor diets. The people become depressed, dull and apathetic. Of these effects of malnutrition we are fully aware. What we need to apprehend is the fact that they can be prevented by simple dietetic measures as rationing becomes more severe.

Epidemic Diseases, the Outbreak of which must be Prevented.

It has fallen to the lot of those who have been working in hospitals in this city during the last three months to see and treat many diseases which they have not met before, such as malaria, dengue fever, amœbiasis, hook-worm infestation, soft sore and brucellosis (undulant fever).

An outbreak of malaria was recorded in this country a few years ago in the Kimberley region. It has been the object of the medical service to treat adequately in hospital all malarial patients returning to Australia in the last few months. About sixty patients suffering from malaria have passed through the wards in this time. Practically all of them were given the routine treatment of ten grains of quinine sulphate three times a day for three days, then 0·1 gramme of "Atebrin" three times a day for five days, then after a spell of two days 0·01

gramme of "Plasmoquin" three times a day for five days. It was interesting to note that in three cases of clinical malaria, in each of which examination of five smears had revealed no parasites, when the blood was centrifuged and a smear was taken from the top layer of red cells, malarial parasites were found. For those patients who have relapsed, we have commenced another course of routine treatment. Repeated blood transfusions proved life-saving for two patients, who were almost unconscious when they arrived. Quinine is still the major remedy. No military operations are possible in malarious countries without adequate supplies of it, or of the equally potent German synthetic product, "Atebrin".

Dengue fever is endemic in our north-west coastal towns. We are told that it is tending to creep southward. Our ability in mosquito control will determine the degree of immunity from it.

It is said that 10% to 14% of the population of the Dutch East Indies harboured amœbic infection. It is true that this condition is prevalent in Western Australia, probably owing to the immigration in years past of infected southern European settlers. The patients we see are carriers, with the symptoms and signs attributable either to the bowel when the lesion is in the intestine, or to the liver when it is the site of the disease. In the former type, one may obtain a history of dysentery of sudden onset with the passage of blood and mucus, and find *Amœba histolytica* in the stools. On the other hand the history may be one of vague, irregular pain, not typical of any particular disease; but examination of the stools reveals the typical cyst. Sometimes there are no symptoms, but routine examination of the stools reveals the parasite. Emetine injections (one grain) are given each day for nine to twelve days, the patient being kept strictly in bed. Later, in chronic cases, emetine bismuth iodate, two grains at night time with phenobarbital, can be given for ten nights.

Chronic amœbiasis of the liver has been found in several instances. The liver may be swollen and tender, and in one instance a large abscess was evacuated. In two cases the main complaint was pain in the shoulder, and in another the provisional diagnosis was unresolved pneumonia. These conditions responded favourably to the injection of emetine.

Fortunately, in this community, the mild endemic typhus fever that prevails is primarily a disease of rodents, which is transmitted from rat to man by rat fleas. A distinction must be made between this and true typhus fever, a louse-borne disease of great communicability from one person to another, found in times of over-crowding amongst an unclean population and seemingly prevalent at present in eastern Europe.

The dysenteries are rather the diseases of bad hygiene. No disease will occur if excreta are satisfactorily disposed of, if flies are kept down and if a pure water supply is guaranteed; but if there are rapid changes due to mobile warfare or to damage in bombed cities to the water supply and sewerage installations without adequate safeguards, disease will become prevalent. We must understand thoroughly what measures should be taken.

Influenza will always remain a major threat. Encouraging work by Burnet, in Melbourne, may yet produce a ready means of inoculation for conferring immunity. In this direction, research must be speeded up and coordinated.

Conclusion.

In conclusion, let me quote Parran, Surgeon-General for Public Health in the United States of America:

> No Nation has arisen to strength as we have, or remained strong as we hope to—no human rights have been established or liberties maintained, without dynamic aggressive reaction. Let us apply this to our own country. The aggressor is at the front door. Our nation is expanding and coordinating all its efforts towards self-preservation. Our immediate task is not to adhere to well-worn patterns, nor to be enslaved as individuals; it is rather that we should, of our own free will, hasten to develop medical practice by progressive expansion.

Acknowledgements.

I am indebted to Colonel Lindsay Male, Deputy Director of Medical Services, and to my Commanding Officer, Lieutenant Colonel A. R. S. Vickers, for permission to read this paper.

Reports of Cases.

AN UNUSUAL CASE OF BACILLUS WELCHII INFECTION.

By W. F. Joynt,

Assistant Director of Obstetrics, University of Adelaide.

Clinical Record.

Mrs. P.W., aged thirty-nine years, was admitted to the Queen Victoria Maternity Hospital at 11 a.m. on July 2, 1942, as an "emergency". Her last menstrual period had occurred on October 17, 1941. She had had four previous pregnancies, of which the first had resulted in the birth of twins, the second and third in stillborn infants and the fourth in a living child; the fourth confinement had occurred twelve years prior to the patient's admission to hospital. All the deliveries had been instrumental. Five years earlier (in 1937) the patient's cervix had been amputated on account of chronic endocervicitis. She had been fairly well during this fifth pregnancy except for "cramp-like pains" in the legs.

On the day before her admission to hospital the patient had had a vaginal examination under general anæsthesia and an effort had been made to dilate the *os uteri*. The membranes had ruptured two days prior to this examination.

On the patient's admission to hospital, examination revealed her to be a middle-aged women with a rather sallow complexion. Her temperature was 98·2° F. and her pulse rate was 100 per minute. The uterus was enlarged to the size of a thirty-four weeks' pregnancy, and an offensive vaginal discharge was present. The fœtal heart was not heard. The patient was not in labour. She was given five milligrammes of stilbœstrol every two hours for four doses. At 6 p.m. her temperature was 101·2° F. and her pulse rate was 128 per minute. At 8 p.m. labour had commenced, and at 3.30 a.m. on July 3 she was delivered normally of a macerated fœtus. The placenta was complete, but the membranes were ragged. After delivery her temperature was 98° F. and her pulse rate 90 per minute. She was examined at 9 a.m. on July 3, when she complained of vague generalized pain. The lochia was offensive. The uterus was well contracted and of normal size; the abdomen was slightly distended. The temperature was 97·8° F. and the pulse rate was 72 per minute. Prophylactic treatment with sulphanilamide was begun. At 2 p.m. the patient's temperature was 97° F. and her pulse rate was 88 per minute. At 3.30 p.m. she complained of abdominal pain and numbness of the hands and feet; her hands became cyanosed. She became restless and complained of increasing pain; this was controlled by the administration of one-quarter of a grain of morphine sulphate. Her condition rapidly became worse, and she died at 7.30 p.m., sixteen hours after delivery. A post-mortem examination showed that death was due to an extensive *Bacillus welchii* infection.

Discussion.

The case is reported for the following reasons:

1. The almost complete absence of physical signs in the presence of a gross infection.
2. The occurrence of a *Bacillus welchii* infection in a late pregnancy.
3. The danger of operative interference in the presence of a dead fœtus.
4. The use of stilbœstrol to induce labour when the fœtus is dead.

Acknowledgement.

I am indebted to Professor J. B. Cleland for the post-mortem examination.

The Medical Journal of Australia

SATURDAY, OCTOBER 3, 1942.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

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MORALS AND THE WAR.

MAN differs from animals in his ability to think and to order his conduct on purposive lines. The two fundamental instincts of all living creatures are those of self-preservation and the preservation or propagation of the species. As man emerged from his early state he applied his intelligence more and more to his behaviour and developed a system of morality, a system of taboos, in which he said to himself and to the members of his tribe: "Thou shalt not." These taboos had to do chiefly with food and with sex and reproduction. Many are found centring round birth, puberty, menstruation, marriage, pregnancy and death. Had this system of taboos not been adopted, the human race might have become extinct. It is important to remember that the first human unit was the family and that after that came the tribe and the nation. As the family is composed of individuals, so is the tribe of families and the nation of tribes. When these relationships are forgotten false ideas of present-day morality may arise. The study of human conduct may be undertaken in several ways. It may be approached and studied objectively or it may be studied in relation to the mental processes associated with it; it may also be studied from the sociological or anthropological point of view. Another distinction must be remembered—the study of conduct undertaken in the ways that have been mentioned is different from ethics. Ethics is concerned more with what conduct should be than with what it actually is—it is concerned with the ideals of human conduct. This does not mean that ethics has to do solely with what may be termed the dreams of idealists; for it is clear that ethics is studied objectively when moral ideas and customs are brought into relationship with other cultural conditions, as, for example, in sociological studies. Thus when we speak of the moral behaviour or outlook of the Australian people, we refer to their actions in relation to the accepted standards of right and wrong, and, automatically almost, in relation to what in our opinion as idealists, if we are idealists, they should be. Again when the words "accepted standards" are used, they indicate yet another fact which is quite easily put on one side; that is, the variation in the accepted standards of morality in different communities and in different strata of the one community.

To discuss standards of morality, why men conform to them and why they disregard them, is not the present purpose. Only a bare outline of this enormous subject will be attempted. Some persons choose their line of conduct from conviction; they have certain beliefs and these may be religious, social or political. In other words, they bow to authority and it is clear that the three authorities mentioned are not of necessity mutually exclusive. Possibly to be included among those who act from conviction are people who set themselves an objective and, casting aside all hindrances and surmounting all obstacles, refuse any action that does not lead to their goal. The goal in these circumstances is generally allied to some authority; possibly, however, the striving and enterprise are the result of some compulsion of the ego, and then the ego becomes the authority. Another group of persons appear to choose their line of conduct from conviction, but really act from habit. The habit may follow on conviction which has lost its force; it may have been inculcated in childhood by adults who themselves were actuated by conviction. Habits formed in childhood are the most enduring, and for this reason the child is fortunate who is born into a family free from disease and possessed of a healthy mental and spiritual outlook. Such a child as it grows older will meet with the same situations and will have the same choice of action as other children; but it will start off as it were on the right foot, its training will come to its aid, habit will instinctively give pause if not check and in the end habit is not unlikely to bring conviction. On the other hand habit may continue till the end of life. This is the more likely to happen if character is not particularly well developed. Our next group comprises what may be termed the drifters. They may be creatures of habit, but if they are they give no hint of having convictions of any kind—they take the line of least resistance or follow the latest suggestion, and for one or more of a variety of reasons—they may be weak-minded and have no capacity for decision; they may be good natured and given to pleasing the friend of the moment; they may be self-indulgent or frank hedonists; they may be bored or lazy; they may seek after approval and like to be thought good fellows. These folk are the froth and bubble of society and sometimes its scum. They are not all unintelligent, but many of them have no serious thoughts on any topic and indeed are often incapable of such achievement. It would be in the best interests of many of these people, equipped and situated as they are, if they could be transferred to our last group, that of those who are so placed that their conduct is not a matter of choice but of compulsion. Of this group it must be stated that in a true democracy they would not exist. Their number in the Commonwealth of Australia is an indication of our failure to achieve the ideal in democratic living.

This classification is helpful in relation to recent discussions in the Australian Press on morals in wartime. When alcoholic and venereal excesses are forced upon the public attention it is natural that notice should be taken

of them. Many of the correspondents have shown a curious lack of understanding and some of the suggested remedies have been futile. Unfortunately the very publicity given to the questions at issue has possibly tended to aggravate the trouble, for men and women, especially when they are young, are copyists, and a wave of hysteria is easily started. In the opinion of many such a wave is taking place. The causes are inherent in the effects of war on the individual and in the present conditions of life. The excitement and tension and the feeling of insecurity and of the uncertainty of what a day may bring have effects on people that will differ to some extent according to the way in which they habitually order their lives. Generally speaking, the stable and purposeful members of the community will remain steadfast. But not always, for the most surprising things may happen to upset our ideas and confound our judgements. The creatures of habit will be unpredictable in action; some will "carry on" as usual and others will become the subject of public comment. By far the greater number of our third or "drifter" group will be among those who will

> . . . fill the Cup, and in the Fire of Spring
> The Winter Garment of Repentance fling.

Apart from the action of the individual, we have to consider the fact that money is plentiful and that some men and women have much more ready money than they have ever had before. It is interesting to note that one person finds the root of the evil (for an evil state does exist) in the failure of family life and the lack of parental control; another inveighs against the system of education—the children are not taught all that they ought to know about the dangers that will beset them; another declares that the church has failed—and so on. Rarely does a man or woman say: "The country as a whole has failed and I as a member of it have failed." Those who blame lack of family control should ask themselves whether they set the example that they should have set to their own families and whether they created an atmosphere of trust and confidence in which their children could grow and come to maturity. The vehement denouncers of the education system should ask themselves exactly where the fault lies and whether they have taken any steps to have it remedied. Those who fulminate against the church should be asked whether the church consists of stone buildings served by clergy, or whether it is not rather a body of men and women expressing certain beliefs and trying to put them into practice, and then whether they (the fulminators) are earnest members of that body. If they are not they have no justification for their fulminating—and so, too, about complainants against education and family. It must be recognized that, if children were brought up in families where they would acquire a proper sense of values, there would be a reasonable foundation on which school and church could build. It is a little late, however, to put forward such a contention to deal with the present wave of hysterical excess. Other common-sense methods must be tried. The greatest need today is for places where young men and women can meet for social intercourse. It is entirely natural for a man of the fighting forces, or for any other young man for that matter, to seek the company of women and it is good for him that he should have it. Provision of clubs, hostels or other establishments (it matters not what they are called) would go a long way towards solving the present problem. It goes without saying that such rendezvous would need to be controlled by persons, preferably women, of understanding and experience. Some small attempt is being made in some places to do this thing, but it must be done on a sufficiently large scale. There is little doubt that voluntary workers would be forthcoming to assist if the authorities made available the necessary buildings and guaranteed at least part of the running expenses. The second urgent need is drastic overhaul and policing of the liquor laws. Some belated action is being taken, but it remains to be seen how the regulations will be enforced and whether salutary punishments will be inflicted on those who infringe them. We read much today of the venereal disease problem, and a difficult problem it undoubtedly is. The papers by Lieutenant-Colonel N. M. Gibson and Dr. J. Cooper Booth, published in last week's issue, testify to this fact.[1] There is no doubt that venereal disease will diminish if the sale of liquor is properly controlled. But venereal disease is at the end of the chapter. We must start at the beginning: therefore the present is a plea for the treatment of young men and women as reasonable and healthy-minded individuals, who will be the more likely to respond if they can be made to feel that they are in some measure responsible for one another.

One point remains. It was stated earlier that the relationship of the individual to the family, the tribe and the nation was important and also that the degree of compulsion required among us was an indication of our failure to achieve the ideal in democracy. This point of view which can only be mentioned on this occasion, is put with much cogency by Edward Carpenter in his book "Civilization: Its Cause and Cure", and may be used to conclude the present discussion. Carpenter points out that in the pre-civilization period the vexed question of morals practically did not exist, simply because in that period the individual was one with his tribe. He goes on to remark that in what he calls the post-civilization period, when true democracy is realized, questions of morals will not exist, because then man will know himself a part of humanity at large, and will be unconsciously moved by the forces belonging to "these vaster regions of his being". Our progress towards this true democracy is slow and painful, but none can doubt that when he does reach it, man will be free in every sense.

Current Comment.

CONCENTRATION OF SULPHANILAMIDE IN BODY FLUIDS.

Articles chosen for editorial comment in these columns are usually of outstanding merit or interest; as a rule, the notice taken is of a friendly, not a hostile nature. Sometimes, however, it is necessary to issue a warning and point an example. Raymond Gregory has published a study of the concentrations of sulphanilamide in acute inflammatory exudates, and compared them with concentrations of the drug in blood collected at the same time.[2] Five patients with proved acute tuberculous pleural effusion were studied. The drug, of course, was given for experimental, not therapeutic purposes. In addition, synovial fluid was collected from one patient with acute

[1] The discussion on these papers is published in this issue at page 328.
[2] *Archives of Internal Medicine*, March, 1942.

and one with chronic inflammatory joint disease. Sulphanilamide was given in a large initial dose of four or five grammes and in doses of 1·0 to 1·3 grammes at four-hourly intervals thereafter. The concentration of sulphanilamide in the blood, pleural fluid and joint fluid was estimated by the method of Marshall, Emerson and Cutting. The results recorded are remarkable. In one patient, the pleural fluid level of sulphanilamide reached 66 milligrammes per 100 cubic centimetres, approximately six times the concentration in the blood. On another occasion, examination of the blood showed only a slight trace and the pleural fluid concentration was 44·4 milligrammes per 100 cubic centimetres, in spite of the fact that administration of the drug had been discontinued eight days previously. Gregory's results are elaborately tabulated; ingenious explanations of these phenomena are suggested, and he observes that, since such high concentrations can be obtained, a much smaller dosage might be employed when the lesion is one of a serous membrane such as empyema or acute arthritis.

A possible explanation is suggested in a letter from Charles Janeway in the May issue of the same journal.[1] Janeway points out that Dr. Perrin Long, several years ago, made the same—and to him startling—discovery that the concentration of the drug in the body fluid was extremely high in comparison with its concentration in the blood stream.

A little further investigation soon revealed that the apparently high level in the body fluid was due to the procaine hydrochloride used for local anæsthesia during withdrawal of the fluid. Many persons erroneously assume that because a method is described for the determination of sulphanilamide it is necessarily specific. The same colour reaction can be given by a number of compounds which resemble sulphanilamide in their chemical structure. The method of Marshall, Emerson and Cutting is therefore not specific, and its accuracy in determining the amount of sulphanilamide in the blood depends on the fact that compounds giving the same colour reaction are normally not present.

Procaine and several other local anæsthetics will give this colour reaction. It must be remembered that the strength of the procaine solution used may be 1% or 2% (100 or 200 milligrammes per one hundred cubic centimetres), and that solutions of procaine hydrochloride of this strength will give colour intensities equal to that given by concentrations of 31 or 62 milligrammes of sulphanilamide per one hundred cubic centimetres. To quote Janeway again:

> Since it is probable that Dr. Gregory used procaine hydrochloride in tapping the pleural cavity and the joints in his patients, it seems to me likely that this is the main source of error in his work. He may be right, but on the basis of his published work his conclusions are open to grave doubt, and they are dangerous in that they give a sense of security to physicians who are treating patients with serious infections by inadequate doses of sulphanilamide and its derivatives.

A tool—or a method—is dangerous in the hands of one who does not understand its use.

ABSORPTION OF IRON.

It was inevitable that when the ingenious method of using radioactive or "tagged" metals was employed in physiology and pathology the technique would be applied to tracing the passage of iron from the ingested food to the blood, from here to the iron reservoirs of liver, spleen and red marrow and finally through the excretory paths. Unfortunately only those wealthy institutes which could face the high cost of the cyclotron or those happy in their association with such institutes have been in a position to carry out this type of investigation. The earlier experiments published two years ago were highly suggestive, but lacked completeness. That completeness has not yet been achieved; but the latest contribution to the subject by five investigators in Rochester, New York, makes a substantial addition to our knowledge.[1] When iron is bombarded in the cyclotron a small fraction is made radioactive; that is, the iron is changed from the usual Fe^{56} isotope to the unstable and radioactive Fe^{59}. It has hitherto been assumed that the living organism makes no discrimination between normal and "tagged" metal. Though this has not been proved, the probabilities are strongly in favour of the assumption. In this research the radioactive iron, prepared in the radiation laboratory of the University of California, was purified and then converted into ferric ammonium citrate, in which form it was administered to human patients and laboratory animals. The movements of the "tagged" iron were traced in the usual way by the Geiger counter so long as the radioactivity persisted (47 day half life). The first important result obtained was the proof that the intestinal mucosa has the faculty of absorbing or refusing iron. When the body is in need of iron this metal is absorbed; when there are ample stocks available the iron in the food is ignored. Apart from this adjustment to the body's requirements there seems to be in the intestinal mucosa a safeguarding action against admission of too much iron into the blood. We know that if a dose of soluble magnesium salt is taken by mouth there is soon a rise in the magnesium content of the blood which the kidney quickly corrects; but if a dose of iron salt is administered, increased absorption is negligible unless there is a clear call for it. This fits in with the old observation that ionic iron in the blood can be toxic; indeed one pharmacologist declared that it was as poisonous as arsenic. The second important result is that the mechanism of absorption is set in action, not by anæmia directly, but by a reduction of the iron stores of the body. Anæmia can exist without increased absorption of iron as in the pernicious and Mediterraneon types and in familial icterus; but in these cases the iron stores are normal. On the other hand there usually occurs in pregnancy a depletion of the maternal iron magazine, and in consequence there is active absorption of iron from the intestines which may be ten times the normal. The publication of this research might well have been postponed for some time to allow for the accumulation of further data. The authors point out gaps in the inquiry such as the possible stimulation of absorption by menstrual loss, and indicate further lines of investigation. More clinical findings would also be acceptable and these will be awaited with interest.

[1] *Archives of Internal Medicine*, May, 1942.

VITAMIN C FROM ROSE HIPS.

Great Britain is short of foods containing a rich supply of vitamin *C*. Oranges are perhaps the most important of these foods, first because of their high content of vitamin *C*, and secondly because of their palatability. For these reasons they are particularly valuable as food for children. The fruit of the rose has scarcely been thought of as a valuable food; but it is a rich source of vitamin *C*, and now it is being used widely in Great Britain.[2] When the supply of oranges dwindled a small army of Boy Scouts, Girl Guides, teachers and Women's Institute members turned out into the lanes with their baskets to gather wild rose hips from the hedges of England and Scotland. Last autumn 200 tons of the fruit were gathered. A disadvantage of rose hips as a food is that they possess fine hair-like processes that are difficult to eliminate. Even the most expert housewives found themselves unable to keep these "hairs" out of the syrup prepared from the fruit. Therefore the task of manufacturing the syrup was allotted to nine factories. They have succeeded in preparing a palatable liquid which contains sufficient vitamin *C* in one teaspoonful a day for a young child and two teaspoonfuls a day for an older child. The Ministry of Health hopes for a much bigger collection of rose hips next autumn. Here in Australia we seem to be faced with the prospect of a shortage of oranges. No doubt something to take the place of orange juice as a source of vitamin *C* for children will be found. It is not likely to be rose hips.

[1] *The Journal of Experimental Medicine*, July, 1942.
[2] *The Indian Medical Gazette*, June, 1942.

Abstracts from Medical Literature.

PÆDIATRICS.

The Management of Hæmophilia.

John B. Johnston (*The Journal of the American Medical Association*, March 7, 1942) points out that although in recent years several agents have been proposed in the treatment of hæmophilia, the most effective treatment today is still the transfusion of compatible blood. There are certain inherent difficulties in this method which limit its use practically to critical emergencies for the patient with hæmophilia. The typing of blood, which transfusion necessitates, automatically limits the number of possible donors among the acquaintances of the hæmophiliac family. The limitation becomes more acute as the number of transfusions increases because of the development of intra-group incompatibilities, as recently discussed by Wiener and Peters. The fact that whole blood cannot be preserved and stored for long periods is another limitation. The use of whole blood has saved the lives of patients with hæmophilia, but it has done little to relieve the chronic disabilities due to repeated hæmorrhages into the joints of these unfortunate patients. For many years it has been known that the plasma of normal blood contains a substance effective in reducing the coagulation time of hæmophiliac blood to normal. This substance has been shown to be associated with the globulin fraction of the plasma. Hitherto no practical method has been worked out by which the effective agent in plasma can be made generally available for therapeutic use. The author's communication reports the effectiveness of dried human plasma (prepared by a modification of the lyophile method by Flosdorf and Mudd) in the management of hæmophilia. Evidence is presented to show that plasma desiccated in a partial vacuum at a low temperature maintains its ability to reduce the coagulation time in hæmophilia in a manner similar to that of fresh citrated blood. It has been shown that storage of the processed plasma does not destroy its thromboplastic activity. Typing and cross matching have been shown to be unnecessary. Five cases have been studied which demonstrate the effectiveness of this plasma in the management of hæmarthroses, hæmaturia and tooth extractions in patients with hæmophilia. One almost totally disabled patient to whom weekly injections of plasma have been given has been rehabilitated sufficiently to be enabled to do steady light work. The plasma is given intravenously in doses of 125 to 150 cubic centimetres.

Curare Treatment of Spastic Children.

Eric Denhoff and Charles Bradley (*New England Medical Journal*, March 12, 1942) have studied the effects of curare administered in various doses by each of several routes at various intervals to six children with cerebral palsy. The patients ranged in age from seven to twelve years. They were all of normal or superior intelligence and spasticity was a prominent symptom in all. Throughout the period of study, except for the time spent in the administration of the drug and in the carrying out of specific tests, each child continued his daily activities in physiotherapy, academic schooling, occupational therapy and free play, individually and in the group. The curare used in the study is known commercially as "Introcostrin". The intramuscular route proved the most satisfactory. By systematic adjustment of the dosage for each child it was found that from 0·9 to 3·3 milligrammes of curare per kilogram of body weight resulted in muscular relaxation lasting approximately four days. No toxic or dangerous effects were encountered under the *régime* employed, and response to muscle training and to the educational programme was definitely accelerated.

Prophylactic Use of Human Serum against Contagion in a Pædiatric Ward.

L. H. Barenberg, W. Levy, N. M. Greenstein and B. Greenberg (*American Journal of Diseases of Children*, June, 1942) have recorded their experience during the past seven years in regard to protection afforded against contagion in a pædiatric ward by injections of human serum. During the period specified, which included the 1940-1941 epidemic of measles, no secondary case of contagious disease occurred among the patients who received pooled serum or plasma. The authors point out that since secondary cases of contagious disease appear in pædiatric wards, especially during epidemics, it is clear that prophylactic therapy, by means of the injection of 30 cubic centimetres of pooled serum or plasma, should be administered to every patient aged over three months as a routine procedure on his admission to hospital. The authors stress the necessity of paying scrupulous attention to the details of the method described in the article. A long-range view must be taken, so that inoculations are given as a routine measure even though an epidemic is not in progress. Once contagion is widespread, it is practically impossible to influence the incidence of secondary cases. A great reduction in the number of primary cases was noted when the method was used. This is presumptive evidence that pooled serum or plasma will abort measles, if it is administered early in the incubation period. Presumptive evidence is presented that pooled serum is valuable as a prophylactic agent against rubella. A constant supply of plasma is made available by the utilization of hospital bank blood plasma. On this basis the authors advocate the adoption of this procedure by all hospitals.

The Natural History of Bronchiectasis.

A. G. Ogilvie (*Archives of Internal Medicine*, September, 1941) has made an extensive clinical, radiological and pathological study of the natural history of bronchiectasis. Sixty-eight cases of bronchiectasis observed over a period of several years are reported. An analysis of the records of these cases, including a pathological examination of lobes excised at operation in 28 cases, was made and the relevant literature reviewed. On the basis of this analysis, the pathogenesis, the ætiology, and the clinical and radiological features of the disease are described. A classification is suggested which recognizes congenital cystic disease of the lung and atelectatic and bronchogenic types of acquired bronchiectasis. Finally, the problem of prognosis of bronchiectasis and the causes of death from it are discussed. The discussion is based on the results in the 68 cases, on the autopsy records of the Royal Victoria Infirmary from 1929 to 1938 inclusive, and on a study of the literature. The author reaches the conclusion that bronchial dilatation may be temporary or permanent. Temporary bronchiectasis is always due to collapse of the lung tissue; but permanent bronchiectasis is the result of the interaction of many factors, of which the most important is infection of the bronchial wall. The numerous pathogenic factors in the evolution of bronchiectasis are grouped under two heads: (i) defects in the bronchial wall and (ii) excessive strain and stress, to which the bronchial wall may be subjected. The question of congenital bronchiectasis is left open, as no conclusive evidence of its existence apart from congenital cystic disease of the lung has been found. The value of an accurate history and of careful physical examination in the diagnosis of bronchiectasis is emphasized. In but few cases have physical signs been absent. The causes of death in bronchiectasis are classified into three groups: (i) local exacerbation or spread of infection within the lungs or thoracic cavity; (ii) direct complications from associated conditions and intercurrent disease; (iii) dissemination of infection by the blood stream and the late results of chronic sepsis.

Bacillary Dysentery in a Newborn Infant.

M. Landsberger (*Archives of Pediatrics*, May, 1942) reports a case of mild diarrhœa in an infant, aged ten days, caused by the Flexner dysentery bacillus. Complete recovery followed the administration of sulphaguanidine and dietary measures. The mother, who harboured Flexner dysentery bacilli in the fæces, was probably the source of infection. It seems likely that careful bacteriological examination when newborn infants suffer from diarrhœa may reveal a higher incidence of dysentery bacillus infections in this age group than is suggested by the literature.

Nutritional Œdema in Children.

Ji Chen (*American Journal of Diseases of Children*, March, 1942) has reviewed the literature on the development of nutritional œdema and has briefly discussed the dietary condition of the war refugees and the people of the poorer classes in Shanghai. One hundred and thirty children with nutritional œdema and 222 with nutritional deficiency not associated with œdema were studied. The presence of œdema was not found to alter the clinical manifestations of the other nutritional deficiency conditions or complicating diseases. Nutritional œdema was present less frequently in infants than in older children. It occurred with almost equal frequency in the two sexes. There was a higher incidence of beriberi, tuberculosis, noma and lobar pneumonia in the œdematous group and a higher incidence of typhoid

fever, bronchopneumonia and rickets in the non-œdematous group. Serum protein determinations were made for 26 patients in the œdematous group and 26 in the non-œdematous group. The total serum protein content and especially the serum albumin level were lowered in both groups, but more so in the œdematous group. The globulin values of the serum of most of the œdematous patients and of all the non-œdematous patients were either normal or higher than normal. The values were proportionately higher in the non-œdematous group. The presence of œdema did not alter the general mortality rate; but appeared to parallel a higher mortality rate among the infants aged under two years. Ten children with nutritional œdema who died were submitted to autopsy; œdema of the brain and changes in the adrenal glands were frequently present.

ORTHOPÆDIC SURGERY.

Bone Grafts.

R. K. GHORMLEY (*Annals of Surgery*, March, 1942) discusses bone grafts. Grafts may be of three types: (i) autogenous grafts (from the patient), (ii) homogenous grafts (from another person, usually a near relative), (iii) heterogenous grafts (from another species). Beef bone is the most commonly used heterogenous graft. Autogenous and homogenous grafts may be of the following types: cortical bone (usually tibia), cancellous bone (usually iliac crest and wall), osteoperiosteal bone (usually tibia), fibula or rib, chip-grafts, shave grafts, delayed grafts *et cetera*. Heterogenous grafts may be of the following types: entire bone, cortical and cancellous bone (*"os purum"*) or *"os novum"*, a combination of heterogenous and autogenous grafts. Grafts also vary in type according to the way in which they are placed at the site of transplant. If a graft is to be a fixative agent as well as to furnish osteosynthesis, some type of cortical bone must be used. If a stronger graft than the simple tibial cortical graft is necessary, a fibular graft may be used; such a graft is stronger and will better withstand any shearing force that may be present. Cancellous bone may be used to fill in defects in bone; sometimes in such circumstances both cancellous and cortical bone will be necessary. The author considers that when a plastic effect is required, such as the formation of a shelf over an inadequate acetabulum, the cancellous bone from the wall and the crest of the ilium is best. When speed of union is important, cancellous bone is probably best, if it is otherwise suitable. The final result of a bone graft is often not reached for several months or years. Bone grafts must become attached to the host by granulation tissue, which has to invade the graft. During this period the graft may undergo apparent death, of varying degrees of completeness. After vascularization has been established the graft may seem to atrophy, owing to the increased circulation. During this period of transformation and reduced density, grafts may be easily fractured. Finally both cortical and cancellous grafts are restored to normal consistency. Most grafts grow thicker and heavier over a number of years as they are subjected to stresses and strains. Ultimately revascularization may take place in dead bone, which is replaced by new bone; this is shown by the disappearance of beef bone screws from grafts. If radiological examination shows that they have not disappeared, "retarded bone metabolism" may be at fault. Although he has used beef bone screws for years, and has found them satisfactory, the author has recently been using vitallium screws; they have apparently been satisfactory up to the present. He considers that circumstances must be extraordinary to justify the use of heterogenous bone, and that autogenous grafts should be used if possible.

Subtalar Dislocations.

ROBERT A. WISE (*Annals of Surgery*, March, 1942) reports a case of subtalar dislocation and reviews the literature on the subject. A subtalar dislocation is a rare traumatic injury of the foot, in which the calcaneus and the navicular bone are displaced, the talus retaining its normal position within the ankle mortise. The displacement of the foot on the talus may be inward, outward, backward or forward. In the author's case the dislocation was of the inward type. With regard to the pathology of the condition, the author states that in typical inward dislocations the head of the talus is completely separated from the navicular bone and lies on the external aspect of the foot on the superior surface of the cuboid bone. The extensor tendons are medial to the head of the talus and the cruciate crural ligament is beneath it. The calcaneous ligament is displaced inwards. Damage to ligaments is extensive; the dorsal talo-navicular, the interosseous talo-calcaneal, the anterior and lateral talo-calcaneal and the anterior talo-fibular ligaments are ruptured. Rupture of the powerful interosseous talo-calcaneal ligament is essential to the production of the dislocation. In the outward type, the head of the talus lies on the medial side of the foot in relation to the inner surface of the navicular bone, while the calcaneous is displaced outwards. In the backward type, the calcaneus is displaced backwards and the head of the talus rests upon the upper surface of the navicular bone. In the forward type, the calcaneus is displaced forwards and the head of the talus rests upon its upper surface. Compound dislocations with protrusion of the head of the talus are of frequent occurrence. Necrosis of the skin, which is tightly stretched over the head of the talus, occurs as a complication of late reduction. Discussing treatment, the author states that in simple, early cases closed reduction is as a rule easily obtained by traction and manipulation. General or spinal anæsthesia is necessary, and the knee should be flexed so that the calf muscles are relaxed. Reduction of the inward type of dislocation is obtained by traction downwards in the axis of the leg, and the foot is dorsiflexed. As pressure is exerted on the head of the talus, the foot is everted. The insertion of a Kirschner wire through the calcaneus will make possible more powerful traction. Reduction of the outward type is obtained by similar downward traction; the foot is inverted as pressure is exerted on the head of the talus. When reduction is prevented by the *tibialis posterior* tendon, it may sometimes be successfully obtained by forcible dorsiflexion of the foot, which relaxes the tendon. Reduction of the backward type is obtained by Destot's method. The foot is forced into extreme plantar flexion, and as forward traction is placed on the calcaneus, the head of the talus is pressed into its normal relationship with the navicular bone. In only one case in the literature was closed reduction successful in the forward type. That case was reported by Broca, who applied downward traction on the foot to disengage the calcaneus from beneath the talus and then pulled the foot backwards. Arthrotomy is required when closed reduction is unsuccessful; the author describes the procedure. In late cases, when treatment has been delayed, generally talo-calcaneal and talo-navicular arthrodesis after open reduction is required. Sometimes simple closed reduction will be successful in a late case. Compound dislocations may be safely treated by careful *débridement*, reduction and immobilization. Excision of the talus should not be performed except in late cases associated with infection, or when a badly comminuted fracture of the talus has occurred.

Steel Wire Sutures.

G. H. PRATT (*Surgery, Gynecology and Obstetrics*, April, 1942) presents the results of nine years' clinical experience with steel wire as a suture material. He first discusses the advantages and disadvantages of other suture materials, on the basis of experimental work done by himself, in which about 750 sutures of different materials were implanted in surgically prepared areas in 125 patients. Wire caused the least amount of reaction, and steel wire, as distinct from silver wire, which caused skin discoloration by oxidation, was imperceptible in 95% of cases. The ideal suture material is one requiring a minimum of trauma for its insertion, having a tensile strength sufficient to assure its maintenance, and causing the least possible amount of tissue response. For the past eight years the author has used steel wire exclusively for retention and skin sutures in all abdominal and other wounds. As is the case with silk sutures, the technique must be varied. Small "bites" of tissue should be taken and smaller needles and finer instruments are used. Tissues must be merely approximated and the knot must not be pulled tightly, for the wire will not yield with tissue swelling. A square knot should be tied and the ends cut at the knot. Kinking of the wire must be prevented, and the assistant may prevent snarling by following the suture through. The wire should be of just such a size as to have only sufficient strength for the purpose for which it is being used. In the period during which the author has used steel wire, he has never seen tissue reaction to it. He considers that steel wire is effective in the closure of abdominal wounds, in which it may be used as a buried suture, and it is particularly valuable in infected or contaminated areas. Its adoption in all cases of hernia has in his hands brought about a great reduction in morbidity and in the period of disability; patients have been able to resume their work in four weeks. The author particularly stresses the value of steel wire sutures for serosal suturing and in the field of plastic surgery.

British Medical Association News.

SCIENTIFIC.

A meeting of the New South Wales Branch of the British Medical Association was held on August 27, 1942, at the Robert H. Todd Assembly Hall, British Medical Association House, 135, Macquarie Street, Sydney, Dr. W. F. Simmons, the President, in the chair.

Venereal Disease.

Colonel N. M. Gibson read a paper entitled "Control of Venereal Disease in the Army" (see page 290 of the issue of September 26, 1942).

Dr. J. Cooper Booth read a paper entitled "The Prophylaxis and Treatment of Venereal Disease at a Public Clinic" (see page 292 of the issue of September 26, 1942).

Dr. A. C. Telfer discussed the sequelæ of gonorrhœa. He said that there would always be sequelæ, so long as human nature remained unchanged. The sequelæ were due to (i) the non-cooperative patient and (ii) the disease itself or its management. For consideration Dr. Telfer submitted that the sequelæ were due to one of three things: (i) ineffective treatment, which might be too little or too much; (ii) inadequate tests of cure (Colonel Gibson and Dr. Cooper Booth had already pointed out that in these days of sulphanilamide treatment much greater care had to be taken with these tests); (iii) injudicious or inept urethral irrigations and manipulations. The first two causes were obvious; the third was in general conceded, but much argument had taken place over the word "injudicious". Dr. Telfer said that his own definition of the word was the following: "Any irrigation or manipulation of the urethra performed by the patient himself, however intelligent, or by an attendant, lay or medical, not thoroughly trained." Urethral irrigation was so fraught with difficulty that Dr. Telfer was altogether against its use as a routine measure, unless the patient could receive individual attention. That was a counsel of perfection, not possible in all circumstances; but it was the ideal for which to strive.

Dr. Telfer went on to say that he would deal only with those sequelæ of gonorrhœa which affected the genito-urinary system. Chronic gonorrhœa or its aftermath produced three conditions in the anterior portion of the urethra: (a) inflammation of the glands of Littré and of the submucosa, (b) inflammation of Cowper's glands, (c) stricture. He proposed to deal with the three conditions separately, not because they were entities, but for the sake of clarity. The surgeon who treated infections of the urogenital apparatus had constantly to bear in mind the possibility of infection in all parts of the tract. With regard to chronic littritis and chronic urethritis, Dr. Telfer said that the gonococcus might be hidden in the urethral glands for years; but more often other pyogenic organisms were responsible for the continued symptoms and signs. The mouths of the ducts might become sealed with inspissated material or by leucocytic infiltration, and if the organism was virulent enough or if the local resistance was poor, abscesses might form which ruptured into the urethra or sometimes externally to form fistulæ. Gleet was often the only symptom, and the signs varied from the presence of shreds and a few pus cells in the urine to a feeling of nodules along the urethra and the possibility of palpating Cowper's glands. At endoscopic examination the inflamed openings of the urethral glands were sometimes seen. Massage over a sound would generally bring about resolution of this periurethral infiltration. Dr. Telfer said that he could never understand the rationale of the application of silver nitrate to these openings, although sometimes disappearance of urethral threads and lessened irritation did follow the silver nitrate probing of these ducts. Chronic cowperitis was often overlooked. Gleet and urethral irritation called for an examination of these glands. With the operator's forefinger in the patient's rectum and the thumb on either side of the perineal raphé, Cowper's glands could be palpated only if they were much enlarged. This manœuvre should be carried out at all rectal examinations, so that the surgeon might become familiar with the normal findings. Few endoscopists had seen the openings of Cowper's glands. Harkness had stated that 16% of patients suffering from gonorrhœa had demonstrable cowperitis. Lesseznyski, in 1922, had examined *post mortem* 44 consecutive subjects; he had found that only 56·8% had normal Cowper glands, 36% had old or recent inflammation of the glands, and one in five had uncured cowperitis. Dr. Telfer pointed out that inflammation of Cowper's glands should thus be borne in mind as a cause of gleet, of relapse of gonorrhœa and even of metastatic dissemination. Acute cowperitis should be treated most conservatively; chronic inflammation generally cleared up after massage. Abscesses of Cowper's glands had to be incised; they should be remembered in the differential diagnosis of abscesses in the perineal area.

Referring to the second group of sequelæ, Dr. Telfer said that chronic gonorrhœa or its aftermath produced verumontanitis, granulomata, prostato-seminal vesiculitis, chronic or recurrent epididymitis, stricture, sclerosis of the bladder neck, sterility and neurasthenia. Invasion of the posterior portion of the urethra produced the most serious aspects of gonorrhœa, both because of its effects and because of the difficulty of eradicating it. It was therefore to this area that most attention should be paid when the tests of cure were being made. As in chronic infection of the anterior portion of the urethra, gleet and threads in the urine might be the only symptoms. When the acute stage of the infection with its associated frequency of micturition and dysuria had settled down, the symptoms might be many and varied. Local symptoms might be inflammatory, obstructive or sexual. The inflammatory symptoms—pain at the end of micturition, frequency of micturition and sometimes hæmaturia, and possibly recurrent attacks of urethritis or persistent gleet—should focus attention on this region. Symptoms and signs of obstruction (nocturnal frequency of micturition, poor stream of urine *et cetera*) were often confused with those of an enlarged prostate gland. The host of sexual symptoms that followed posterior urethritis, with its accompanying inflammation of the prostate and seminal vesicles, were often ignored. In common with other aspects of gonorrhœa, these sexual symptoms were often treated as a joke. Dr. Telfer went on to say that remote symptoms included vague referred pains, especially in the lower lumbar and perineal regions, and focal infective lesions of joints and tendons; they often baffled the doctor who was not "prostate conscious". It was interesting in that connexion to note that the orthopædic section of the Cleveland Clinic stated that approximately 41% of the patients with joint symptoms had prostatitis (not in all cases gonococcal). The infected genital tract was therefore a dangerous factor in focal sepsis, not because of the great frequency of infection at that site, but because less consideration was given to it.

Dr. Telfer then said that the diagnosis of this posterior urethral invasion depended finally on four factors: (i) inspection of the urine (the two glass test), (ii) palpation of the prostate and seminal vesicles, (iii) examination of the prostatic and seminal secretions and (iv) endoscopic examination. The trained fingers should generally be able to differentiate between chronic inflammation and adenoma; but this was not always so. Some forms of chronic prostatitis were difficult to differentiate from early cancer, and moreover infection was sometimes associated with adenoma. In the attempt to obtain a prostatic bead for examination, the prostate should not be massaged too vigorously just because no bead appeared at the urethral orifice. Two things might have happened: the prostatic fluid might have been expressed into the bladder (an examination of the specimen of urine passed after massage would decide this), or drainage might as yet be inadequate. Sometimes a prostatic bead was obtained only after gentle massage at intervals of four days at least. Negative results should not be considered final until the third examination. Dr. Telfer stressed the importance and the simplicity of examination of wet films of the prostatic bead. The progress of the infection could be estimated by the decrease in the number of pus cells, by the increasing numbers of lecithin crystals and by the decrease in the number of degenerative cells and of *corpora amylacea*, those products of stasis. Many prostates seemed normal on palpation, but functioned badly and contained large amounts of pus, débris and organisms. Palpation and stripping of the seminal vesicles should not be neglected. The seminal vesicles in health were difficult to palpate; thus palpation of these vesicles was sometimes more informative than palpation of the prostate. The surgeon should never forget that the infection would probably involve the whole genital tract; the name "prostato-seminal vesiculitis" was much more accurate than "prostatitis", and the name "chronic infection of the genital tract" was still more useful. Dr. Telfer went on to say that endoscopic examination was an important method of discovering the existing pathological condition. In the presence of obstructive signs and symptoms, endoscopy was essential. Mucous polypi and granulomata on and near the urethral crest were often the only visible signs of a

pathological process causing much annoyance to the patient. Dr. Telfer said that only recently he had examined two men with vague urinary symptoms and perineal irritation, and with symptoms previously labelled neurasthenic, who obtained immediate relief after the application of light diathermy to granulomatous and mucous polypi in the posterior portion of the urethra. Prostatic massage and vesicular stripping were the sheet anchors in the treatment of prostato-seminal vesiculitis. The procedure should be carried out gently and no more frequently than once every four days. In massaging the prostate one should remember that the object was to increase the tone of a muscular organ and not to push material out of a sac.

Dr. Telfer went on to say that the ideal approach to chemotherapy was a knowledge of the organisms involved. The application of cultural methods to the prostatic bead was therefore essential, especially in post-gonorrhœal infections. The gonococcus might lie dormant in the prostate for years, but most frequently it was superseded by other pyogenic organisms, notably the staphylococcus. Sulphathiazole was the best drug available at the present time for such staphylococcal infections; but the arsenical preparations for intravenous use were sometimes effective. If prostatitis did not resolve in a reasonable period after intelligent treatment (and it was possible for the prostate to be massaged and bruised too much), the posterior portion of the urethra should be inspected. Old chronic prostatitis with abscess formation could often be cleared up by transurethral resection; the cavities were opened and free drainage was established. In general, attention to hygiene, the removal of septic foci, prostatic massage and chemotherapy would be sufficient treatment for most chronic infections.

Dr. Telfer then went on to discuss stricture. He said that much that had already been said had to be borne in mind, and that he proposed to refer only to the principles involved in the formation, diagnosis and treatment of urethral stricture. The causes of gonorrhœal strictures, which occurred most frequently in the penile or the bulbous portions of the urethra, could be enumerated as (i) neglect, (ii) virulence of the organism and poor antibody response, (iii) irritating chemicals and (iv) rough and careless instrumentation. The abnormal narrowing or loss of distensibility was a matter of degree, since the actual size of the urethral lumen varied in different subjects. Despite the fact that interference with micturition varied greatly according to the different strictures and their location, and in different urethras, McKenzie's definition of a stricture was a good one. It was: "Any narrowing which interferes with urination or which produces a ridge sufficiently prominent to cause ulceration behind it." Dr. Telfer went on to say that stricture was due to chronic urethritis. If acute inflammation involving the submucosa and urethral glands resolved, no stricture would form. But if resolution did not take place, granulation tissue and later scarring would produce stricture. The question might be asked how many strictures were due to the virulence of the organism or poor antibody response, and how many were due to injudicious urethral manipulations. With increased knowledge of gonococcal bacteriostatics and the consequent lessening of the use of urethral injections and manipulations, the incidence of stricture would grow less and less. Stricture formation did not follow effectively treated gonorrhœa. Strictures had been classified in a great variety of ways—as membranous, bridle, ribbon, gristly, soft, hard, single, multiple, permeable, impermeable or spasmodic; but for all practical purposes they might be called either spasmodic or fibrotic. Spasmodic stricture was an involuntary contraction of the *compressor urethræ* muscle, and it was therefore always situated in the membranous part of the urethra. It was due to nervousness, excitement, some nearby irritative lesion, or unskilled manipulation. It was a source of danger only when the condition was not recognized by the surgeon attempting to pass bougies forcibly. Gentleness and slight constant pressure against the spastic muscle would usually overcome the obstruction. Dr. Telfer pointed out that that type of stricture was not due to gonorrhœa, nor did it follow it; but it deserved inclusion because it might prove a stumbling block to the uninitiated. The important thing was to recognize it for what it was—a spasm of the external sphincter. With regard to fibrotic stricture, Dr. Telfer said that the term included all those strictures that were due to fibrosis, whether they were early and soft or late and hard. Chronic gleet or discharge, alteration in the size of the urinary stream and frequency of micturition should always draw attention to the possibility of stricture complicating chronic infection of the urogenital tract. It was generally many years after gonorrhœal infection that the patient presented himself for examination. The doctor's duty was first to make a diagnosis of the character and location of the stricture, then to decide on the best method of treatment, and lastly, to remember again that the stricture was only a manifestation of a chronic infection of the genital tract.

Dr. Telfer then referred to the two methods of diagnosing the character and location of the stricture—urethrography, and the passage of bougies or metal sounds for calibration of the stricture. Urethrography was the ideal approach to the problem; Dr. Henry Mortensen, of Melbourne, had in his recent article in THE MEDICAL JOURNAL OF AUSTRALIA given written and pictorial proof of its importance. The location and nature of the stricture and the presence of other associated pathological conditions could often be demonstrated. The passage of sounds or bougies was the most important step in the diagnosis and treatment of stricture. The increasing number of letters and papers appearing recently in medical journals on the deficiency in the training of medical students and resident medical officers in the diagnosis and management of stricture supported Dr. Telfer's own observations on the subject. He thought that if the Section of Urology could persuade the responsible authorities to rectify such neglect in training, the management of patients suffering from stricture would greatly improve; that was particularly true of strictures complicated by acute retention of urine. A sound or bougie would either pass through the narrowed area almost by its own weight, or it would not pass at all. Further slow manipulation, alteration of the angle of approach, a smaller sound or bougie, good lubrication and gentleness, not force, should follow failure. Dr. Telfer remarked that in this connexion someone had said that there were many more false passages than strictures. At first a moderate-sized sound or bougie (number 15 French, for example) should be tried. If this could not be passed, one or two smaller sizes could be tried. If these could not be passed, an immediate change should be made to gum-elastic filiform bougies, and if the stricture could be passed a "follower" might be screwed in. If the patient could pass urine at all it was wrong to try to force the issue; even after as many as three unsuccessful attempts made at intervals of four days, success was sometimes achieved. Even if deeper strictures could not be passed immediately, patients noticed a great improvement in their condition. Dr. Telfer pointed out that more than a slight amount of bleeding meant that either a false passage had been entered or mucous membrane had been torn; gross tearing would certainly lead to more inflammation and the formation of more scar tissue. It was a bad policy to pass more than one or two sounds at one sitting. Forceful and too rapid dilatation of a badly infected urethra might bring great danger to the patient. Rigors might usher in pyelonephritis, or tearing might lead to extravasation of urine, followed by death in one week. If such catastrophes occurred, it was important to establish free and quick drainage of urine by cystostomy. In any complication following urethral damage, the immediate establishment of a cystostomy opening could be an urgent requirement, and was a life-saving measure.

Dr. Telfer went on to say that the best treatment of stricture was still gradual, progressive dilatation until the correct size of the urethra for the patient was reached. The necessity of keeping open a narrowing urethra must be impressed on the patient. Regular dilatation at increasingly long intervals was much preferable to the hazards of rapid dilatation under anæsthesia whenever the symptoms and signs had recurred. External urethrotomy should be reserved for strictures which could not be dilated or which closed too rapidly. The excellent results usually obtained after external urethrotomy made it difficult for Dr. Telfer to approach with equanimity the hazards of excision of the portion of the urethra affected by a stricture.

With regard to acute retention of urine, the result of sudden congestion around the area of the stricture, Dr. Telfer said that the condition required immediate relief. If it occurred for the first time in a patient who had up till then had a fairly good stream of urine, hot baths and the administration of sedatives would often be sufficient. If those measures failed and the stricture could not be passed by filiform bougies, recourse to cystostomy was necessary; once a bougie was in place, the urine would leak away around it. Dr. Telfer said that the occurrence of suprapubic cellulitis following suprapubic puncture had convinced him that suprapubic puncture was in most circumstances a dangerous procedure. The establishment of a high suprapubic cystostomy through a small incision was a simple procedure, almost devoid of shock, and undoubtedly the operation of choice. Text-books listed periurethritis, prostatitis, seminal vesiculitis and epididymitis as complications of stricture. If the disease was viewed in its proper

perspective, they were really not complications; they had been there all the time, often in a quiescent state; they were the accompaniments of the same pathological process—chronic infection of the urinary tract. The other more dramatic and lethal complications of stricture (periurethral abscesses and extravasation of urine) demanded immediate free incision, with suprapubic diversion of urine. Dilatation and infection of the upper portion of the urinary tract, with pyelonephritis, sometimes leading to septicæmia and death, were often the end-results of inadequate drainage of the bladder.

Dr. Telfer went on to say that, since diseases of the urinary apparatus affected the vital problems of blood chemistry and physics, they deserved the greatest care in treatment. Stricture of the urethra and its complications were too prone to be treated almost jocularly; but bad treatment was often fraught with dire results.

Referring to sclerosis of the bladder neck, Dr. Telfer said that it was essentially due to the same pathological process as stricture and that it often accompanied stricture of the anterior or posterior portion of the urethra. Consciousness of the possibility of its existence was easy to those who would remember the phrase he had often repeated—chronic infection of the genito-urinary tract. Patients successfully treated by gradual dilatation of the stricture might still complain of a poor urinary stream, and might seem not to have responded to adequate dilatation and prostatic massage. In such cases panendoscopic examination often revealed sclerosis of the bladder neck or the formation of a median bar; the urethral glands under the mucosa of the bladder neck had not escaped invasion, infiltration and scarring. A small resection of the obstruction would often solve the problem of the otherwise unexplained urinary difficulty.

Dr. Telfer then referred to sterility. He said that the members of the medical profession were becoming increasingly aware that the male was responsible for a large proportion of infertile marriages. The fault in the male was due to one of two things: faulty manufacture or faulty delivery of the spermatozoa. The actual presence of pus did not appear to affect the fertility, or at least the degree to which it did so was not apparent. Sclerosis or blocking of the epididymes, the *vasa deferentia*, the seminal vesicles and the ejaculatory ducts was the most frequent cause of faulty delivery. Unfortunately such patients were probably doomed to permanent sterility. No certain means had been devised of clearing these passages or of short-circuiting the sclerosed or blocked area. The hope lay rather in prevention of the condition than in its cure.

Dr. Telfer then discussed neurasthenia. He said that the man whose nervous stability could not stand the strain of either gonorrhœa or the fear of gonorrhœa was indeed unfortunate. Such a man wandered anxiously, even desperately, from doctor to doctor, convinced that he was still suffering from gonorrhœa. The first duty of the doctor was to establish beyond any reasonable doubt that the patient was not suffering from the disease. The most rigid tests of cure should be instituted and the patient should be told that they were the final tests. A sane and robust demonstration of those tests must form the basis of any psychological treatment. Therefore it was essential to prove that the patient had no lesion of the lower portion of the urinary tract before indicting an unstable nervous system. The two patients to whom Dr. Telfer had previously referred emphasized the need for full examination of so-called neurasthenics.

Dr. Telfer then summarized his remarks concerning the principles involved in the management of the sequelæ of gonorrhœa. He said that the first principle was thorough examination of the whole urogenital tract of a man complaining of gleet, urethral irritation and frequency of micturition. Such a man should not be treated with sulphanilamide and faith only. Faith was the substance of things hoped for, the evidence of things not seen; but faith did not, for example, uncover or relieve festering venereal warts or septic carcinoma under the unretracted foreskin. Dr. Telfer had within the previous fortnight encountered those two conditions; both patients were being treated with sulphanilamide and urethral irrigations, because they had complained of a urethral discharge. The second principle was the necessity to consider the pathological process as involving the whole of the urogenital tract. The patient was suffering from chronic infection of the genital tract.

Dr. H. C. Finn congratulated the readers of the two papers on the fine manner in which they had dealt with the subject. He said that as they had pointed out, the spread of venereal disease was due mainly to badly treated or insufficiently treated people who were let loose and not cured. Dr. Finn was surprised that none of the speakers had made reference to cultural methods. He said that it had been his experience that the number of pus cells seen per field in examinations of smears could be very few, yet culture had produced a growth of gonococci and the complement deviation test produced no reaction. Dr. Cooper Booth had referred to patients who continued to give a reaction to the gonococcal complement deviation test for as long as two years. Dr. Finn had recently examined a patient who had contracted venereal disease thirty years previously and who still reacted to the complement deviation test. A search for a focus of infection revealed one in his prostate gland, though the patient said that he had had no urethral discharge for thirty years. Another man had recently consulted Dr. Finn; he had no actual complaints, but he wanted to marry. His own medical attendant thought that his infection had been cured eight years earlier; but the complement deviation test produced a positive result, so the medical attendant sent the patient to Dr. Finn. In spite of attempts at culture and the performance of various tests, Dr. Finn was unable to discover the cause of the trouble. Finally, he asked the patient whether he had any discharge through the rectum. The patient said that he had, but that it was so slight that he had not bothered about it. That proved to be the cause of the trouble, and after treatment of his rectum the patient ceased to react to the complement deviation test.

Dr. K. Macarthur Brown said that he had greatly appreciated the discussion on venereal disease; it was most opportune, because the disease was a great menace to all the fighting forces. Dr. Brown said that he examined many of the "enthusiastic amateurs" to whom reference had been made. They were aged from fourteen to seventeen years, and Dr. Brown thought that of those committed to institutional care 20% were infected. It was difficult to discover such people under ordinary conditions, because they appeared quite healthy. It was only when pathological tests were carried out that they were found to harbour gonococci, and in the meantime they had been able to infect a great number of men and women. Dr. Brown was in agreement with the statement made earlier in the evening that these people should be treated by someone who thoroughly understood the subject. The subject was a difficult one, and many medical practitioners did not appear to be very interested in it. The patients should be sent to medical men who could carry out the treatment efficiently. Dr. Brown said that he had been wondering whether the subject was dealt with sufficiently thoroughly at the universities. He thought that if the younger members of the medical profession had had a sound training as students, they would have a different outlook on the subject when they entered practice and would have more care for the suffering public. They were at the present time inclined to treat the matter lightly. In conclusion, Dr. Brown again thanked the speakers for the excellent discussion.

Captain P. A. Rundle asked about the possibilities of the continuous intravenous arsenic treatment of primary syphilis. He wondered whether this would hasten the return of men to their units or save them from being "boarded out" of the forces.

Dr. R. G. S. Harris added his thanks to the speakers. He said that there was one point that he wanted to mention, prostatic massage. Dr. Harris thought that the term "massage" was wrongly used, and that a more apt term would be "prostatic expression". On endoscopic examination particularly one could notice how efficient were some methods of applying pressure to the prostate and how inefficient were others. The best idea was to treat the prostate as a semi-elastic sac; moderately firm pressure should be kept up for a short time. When this was done one could see a cloud of secretion flow out from the ducts and the verumontanum, whereas if short, jerky movements were used this did not happen. If the operator's arm was supported on the leg placed on a chair and pressure was exerted by the leg against the elbow, the finger could be inserted another half-inch up the rectum and all the pressure was not made by the finger. Dr. Harris then referred to the passage of sounds and catheters by junior resident medical officers. He said that he had found that not 5% had passed these instruments before their final examinations. That fact was a possible cause of the formation of strictures in cases in which junior medical practitioners had to pass instruments.

Colonel N. M. Gibson, in reply to Dr. Finn, referred to the use of cultural methods to determine the standard of cure. He said that in the process of treatment the question of final tests was not reached until certain things had happened—until there was no discharge, the urine was clear, the findings on rectal examination were normal and there

were only a few pus cells or none on slides made from material obtained by massage. If these criteria were fulfilled, then attempts at culture were most unlikely to be successful. Colonel Gibson referred to statements made by David Thomson, who, he said, was the writer of one of the best text-books on gonorrhœa. Thomson stated that, particularly in the case of women, 90% of diagnoses were made by means of the gonococcal complement deviation test. Colonel Gibson went on to say that in smears of material from the cervix one frequently found organisms indistinguishable from the gonococcus. In his experience it was useless to rely upon smears taken from the cervix. The gonococcal complement deviation test was the most important criterion of cure in the case of both men and women, apart from the discovery of gonococci on slides. In reply to Dr. Telfer, who had referred to the application of cultural methods to smears from the prostate, Colonel Gibson said that the same remarks applied. If the patient was ready for the final tests, a growth of gonococci was very unlikely to be obtained, even if the organisms were present in the seminal vesicles and the prostate gland. Colonel Gibson then referred to the question of the education of medical students in venereal disease. He said that, with apologies to the University of Sydney, the subject was not taught there as it should be. Only two lectures were delivered to students in their fifth year on gonorrhœa, and the same number were given on the dermatological side of the question in syphilis. That teaching was most inadequate and should be criticized. Dr. Harris had spoken of the best position for prostatic massage. Colonel Gibson said that he had always found that the best position for the operator was the standing posture, the patient bending forward and having the knees slightly flexed. The prostate under these conditions seemed to be brought into better position for examination and massage. Colonel Gibson said that the previous speakers had dealt exceedingly well with the subject, and he had been particularly impressed with Dr. Telfer's exposition of the sequelæ of chronic gonorrhœa. They did not appear to differ on essential details, but only on the method of irrigation in gonorrhœa. Dr. Cooper Booth appeared to favour the use of irrigation only after a course of sulphonamide therapy, while Dr. Telfer thought it should be carried out judiciously. Colonel Gibson agreed with Dr. Telfer. From the pathology of the urethra in disease, it was known that the gonococcus invaded the mucosa, the glands of Littré, and the submucosa from the glands of Littré. Colonel Gibson thought that except in the hyperacute cases irrigation should be begun immediately with the idea of establishing drainage from the outset. If the gonococcus was allowed to become seated in the glands of Littré and if the mouths of the glands were closed, then the disease was much more difficult to eradicate. Colonel Gibson thought that sulphonamide treatment was of no permanent benefit without efficient drainage. Prostatic abscess with retention of urine called for immediate prostatotomy. Colonel Gibson had found cowperitis relatively uncommon; but he agreed that all patients suffering from gonorrhœa should be examined for its presence. The formation of an abscess of Cowper's glands was not uncommon, and in any case the patient should be warned that he might have a urethral fistula after such an abscess was incised. Colonel Gibson thought that eventually in such circumstances Cowper's gland should be excised. With regard to systemic disease, Colonel Gibson said that he thought that most of it was due to infection of the seminal vesicles and not to infection of the prostate, though infection of both could go hand in hand. Infection of the prostate gland was much more apt to be cured spontaneously than was infection of the seminal vesicles, which could be a veritable cesspool of pus. Referring to syphilis, Colonel Gibson stressed the necessity for continuous treatment over periods of eighteen months to two years. He said that the system of "course treatment" was bad. From past experience during the last war and with the returning troops of today, Colonel Gibson regretted that the system was still being used; many of the men returning to Australia still reacted to serological tests for syphilis. Once the patient's reaction to the Wassermann test was abolished by treatment, continuous treatment usually retained the patient in that condition. Colonel Gibson stressed the importance of iodobismuthate of quinine. He said that it was infinitely superior to other forms of bismuth, and that he was inclined to think it could almost take the place of arsenical preparations. Colonel Gibson said that he had had no experience of continuous intravenous arsenical treatment, the "drip method"; but they would have no definite knowledge of its efficacy for ten or fifteen years. Syphilis was not a killer in the early stages, and medical journals told them of some deaths following the "drip method" treatment. Colonel Gibson doubted whether at present the administration of arsenical preparations in that way was justifiable.

Dr. Cooper Booth said that he had very little to say in reply since there had been agreement on so many points. With regard to Dr. Finn's remarks about cultural methods he would like to see such methods used, more out of curiosity than for any other reason, for he wished to make as sure as was possible that a patient was cured before being discharged from the clinic and that if the patient returned he would have small grounds upon which to base a complaint of relapse. Dr. Booth went to to say that a state of affairs was coming into existence, in nature somewhat similar to that which existed during the period of economic depression. At that time men became infected in order to obtain shelter and food in special venereal disease wards in hospital. At the present time men were becoming deliberately infected with venereal disease to escape military service, and quite a number had been deferred on account of infection. Some after being cured had returned with new infections before their deferred period had expired and when called up again were still infected and were further deferred. This was very undesirable. Dr. Booth said he would like to add cultural tests to other routine investigations at the clinic; but he could not do so at present.

With regard to a person's carrying gonococcal infection for many years, he remembered a patient whom he had under his care when in general practice, before the last war, and who had all kinds of symptoms, but whose condition remained obscure and undiagnosed. He was consulted by this patient, after the war, for an acute urethral infection. No history of extramarital coitus could be elicited. He had had financial worry and had been drinking more alcohol than was usual since his marriage of eight years earlier. An examination disclosed old vesiculo-prostatic gonococcal infection, and under treatment all the vague pains and other symptoms which had been present for years vanished. His infection probably predated his marriage.

With regard to Dr. Brown's remarks about specialist treatment, Dr. Booth said he supported the suggestion. He had found that in most cases unless a patient was under the care of a specialist he was unlikely to receive all the tests necessary to establish the fact of cure. With regard to massive dose therapy by continuous intravenous administration of arsenical preparations he agreed with Colonel Gibson's remarks.

In the *American Journal of Syphilis, Gonorrhœa and Venereal Diseases* of July, 1942, Moore, in an editorial article, pointed out that the massive arsenotherapy of syphilis was still far too dangerous to be considered as in anything but the experimental stage and unsuited for general adoption. By its use a hazard of treatment was introduced into syphilis at a time when the disease should be neither disabling nor fatal. It was better to search for other methods with less risk in early syphilis. Dr. Booth himself thought that the massive dose five-day drip therapy would possibly pass out of practice; he had had no experience of it, but had followed the literature very closely.

With regard to Colonel Gibson's remarks on urethral irrigation Dr. Booth said that Colonel Gibson liked irrigation, with sulphonamide therapy, from the beginning of treatment, and he himself did not; that was how the matter stood. In the United States of America irrigation was not a routine procedure; sulphonamide therapy was usually unaccompanied by irrigation. Dr. Booth agreed with Colonel Gibson that there was need for trained staff in the use of irrigations. It was essential to have a trained staff who could be trusted to see to the proper sterilization of instruments. He was also in agreement with Colonel Gibson's remarks concerning the course system of treatment in syphilis. He believed that there should be no breaks at all in treatment, course succeeding course. Some returning troops gave a history of courses with rest periods between and that was regrettable, as the results might in some cases be disastrous. Dr. Booth said that apparently the lesson of the last war had not been learnt and that little was being done to guard against undetected syphilis in men on service. Many unsuspected syphilitic infections would be met with in people who had not been worried by signs of disease and so had not received any medical advice or treatment. In conclusion, Dr. Booth paid a tribute to the excellent manner in which Colonel Gibson cooperated with the State health authorities; it was fortunate for all concerned that his services were available to the Army.

Dr. W. F. Simmons, from the chair, said that those present had heard two points of view which were almost unanimous—that of the armed forces and that of the civil community. Venereal disease was an age-old problem, and when the armed forces ceased to exist as a very large

section of the Australian community, the aftermath of damage done would remain for many years. And if close liaison existed between the State and the armed forces, the outlook was much more hopeful than it would have been in the days of the "great gulf" outlook. Dr. Simmons then paid a tribute to Colonel Gibson. He said that he had known him for thirty-five years. For the past twenty-five years, ever since he went to the First Australian Dermatological Hospital at Bulford in 1917, Colonel Gibson had been a champion of the fight against venereal disease. The community owed a great debt to him for his enthusiasm. The Army was fortunate in having such a man, who was so enthusiastic in that branch of work, which had received scant consideration from those in charge of the training of students in New South Wales. Dr. Simmons said that there should be some record of the worth of Colonel Gibson. For the other speakers, those present all knew Dr. Cooper Booth and that he had a job to do; and they were pleased to learn from the remarks of Dr. Telfer that the Section of Urology was keenly interested in the subject. It was probable that by their united efforts they would come to a time when these things would be seen in the right perspective, and training in all branches of medicine would be made more comprehensive.

A MEETING of the South Australian Branch of the British Medical Association was held on August 28, 1942, MAJOR H. M. JAY in the chair. The meeting took the form of a number of clinical demonstrations, and by arrangement with the Deputy Director of Medical Services, South Australian Lines of Communication Area, several military cases were discussed.

Repair of an External Peroneal Nerve Injury.

MAJOR T. K. ALLEN showed a patient who had sustained a gunshot wound of the leg with damage to the external peroneal nerve. After the patient's return to Australia the nerve was sutured by Lieutenant-Colonel L. O. Betts. There was evidence of improving function, with some reduction in the degree of foot drop. Physical therapy was being continued.

Compound Fracture of the Tibia.

CAPTAIN G. VINER SMITH showed a patient who had sustained a severe intraarticular compound fracture of the upper end of the tibia with much comminution. The wound was cleansed and a plaster of Paris cast was applied. On the tenth day after the accident a sudden rise of temperature occurred and there was evidence of temporary circulatory collapse. A window was cut in the plaster cast, but no local cause for the condition was found.

LIEUTENANT-COLONEL E. BRITTEN JONES asked whether fat embolism might account for the sudden acute condition.

LIEUTENANT-COLONEL L. O. BETTS doubted whether that was the explanation; he had never encountered such a case of fat embolism.

SIR HENRY NEWLAND agreed with Lieutenant-Colonel Betts. He said that he himself had never come across such a result of fat embolism.

Lateral Dislocation of the Knee.

Captain Viner Smoth also showed an X-ray film from a case of lateral dislocation of the knee.

Bronchial Spirochætosis.

MAJOR W. RAY showed a patient who had suffered from bronchial spirochætosis (Castellani). He said that such cases were reported to be not uncommon among civilians in Syria, and the soldier under discussion had contracted his illness while on active service there. An X-ray film disclosed no abnormality. The sputum was large in amount, and it contained spirochætes in profusion. Treatment with injections of "Novarsenobillon" brought about rapid and complete clearance of the sputum.

Unilateral Exophthalmos.

Major Ray also showed a patient who had begun about one year previously to suffer from unilateral exophthalmos. The projection of the eyeball prevented closure of the lids. Lieutenant-Colonel L. C. E. Lindon had operated on the patient and removed a pad of orbital fat. No tumour or other local cause was found for the disorder, and satisfactory improvement in the patient's condition followed the operation.

Abnormal Glucose Storage.

Major Ray then demonstrated blood sugar curves illustrating an abnormality in glucose storage. The presence of a high glycæmia with glycosuria made the condition resemble true diabetes. After the patient had had a few days' rest in hospital with a restricted diet, a normal sugar tolerance curve was obtained.

COLONEL A. R. SOUTHWOOD referred to the hepatic diabetes described by the French clinicians. He said that the case described by Major Ray appeared to be of that type; the liver's ability to store glucose was temporarily disturbed. The condition probably had no relation to pancreatic diabetes.

Bilateral Renal Calculi.

MAJOR L. A. WILSON showed X-ray films of bilateral renal calculi of large size. He said that one one side almost a gallon of pus had collected in the perinephric region; this was drained away. For the time the patient's condition was comfortable, although the renal function was much depressed.

Correspondence.

MUST THERE BE A REVOLUTION IN MEDICAL PRACTICE?

SIR: The article by Alan E. Lee entitled "Must There be a Revolution in Medical Practice?" appearing in your issue of August 29, 1942, must surely be appreciated by all thoughtful individualistic medical men.

That so many in the past have assumed without much consideration that a radical change is not only inevitable for political reasons, but is necessary from the medical aspect, is surely a blot on the foresight and judgement of a proportion of medical practitioners.

It must be admitted that there are two sides to every question and that the evidence in favour of a radical change has been ably presented by a few thoughtful, sincere individuals. They have been backed up by a large number of less informed and less courageous individuals who think in terms of their own security. Whether a radical change is desirable, and if so why, does not occur to them. They set about discussing capitation fees, hours of work, sick pay, holidays and pensions for themselves. Have the great majority no courage or confidence in themselves? Do they want to be parasites on the community, so that, when their physical and mental energy fades, due to advancing years or bad habits, they can receive remuneration and wield power out of all proportion to their declining ability?

Experience is a valuable asset; but it rarely balances the lack of enthusiasm, imagination and energy that is usual, at least in the case of general practitioners, as age advances past early middle age.

Even in Russia, where the soil in the early years was surely more fertile for socialization of medicine than in Australia today, they have reverted back to a moderate amount of private practice.

Admittedly a government's function is to govern; but how many of us are inspired by or have real faith in the majority of politicians? Our difficulties in this war are partly due to a lack of interest in politics. Surely we would be spineless, in the circumstances, not to at least put up a fight against political vote catchers.

Before we consider how to engender political and public appeal, in a scheme for alterations in medical and allied social services, we must first decide where the present methods are defective.

In my opinion the existing facilities relating to medical treatment in Melbourne are defective in the following ways:

1. There is inadequate sick pay for genuinely ill workers in the lower wage class. Who but mental defectives can be expected to take adequate time off work when they do not receive in sick pay sufficient for bare necessities? It is essential to solve this problem first.

2. No provision is made for the adequate treatment of the indigent aged or unemployed in their own homes.

3. The facilities are poor for the rapid investigation at cheap rates of disease of the worker and lower income group.

4. There is not sufficient consideration given to the middle income group in the way of sharing the expense of expensive illness.

5. Practitioners often work too long hours. They should be forced to do week-end work and night work on a roster system.

These remarks obviously refer to populated places. Sparsely populated country districts have their own special problems.

If the five defects enumerated above were effectively remedied by a modification of our present systems, who could legitimately complain? Under any system there will always be a number of genuine complaints levelled against individuals.

Why does the Federal Council find examination of details so urgent? Surely discussion of principles is more important at this stage.

I am of the opinion that nothing should be decided if possible until after the war, when the medical brains both outside and in the Army will be freed to consider these problems. In the meantime the best brains must be used on winning the war instead of this relatively trivial matter of medical service.

I believe a moderate extension of the salaried service to cover investigation of disease and other points already referred to is desirable, but that does not mean the virtual exclusion of private practice.

Yours, etc.,

H. Boyd Penfold, M.B., B.S.

Melbourne,
September 14, 1942.

SHOCK AND ANÆSTHESIA IN RELATION THERETO.

Sir: I read with great interest and appreciation Dr. A. Distin Morgan's article "Shock and Anæsthesia in Relation Thereto" (The Medical Journal of Australia, September 5, 1942). However, his statement regarding "the high incidence of post-operative chest complications" following the use of local infiltration and field block surprises me.

During the past eight years, I have either assisted at or performed at least 600 major operations under local anæsthesia. Many of these operations were performed on upper abdominal viscera and have involved, amongst other procedures, the blocking of the sixth to the eleventh intercostal nerves inclusive on both sides of the body.

My impression has been that post-operative chest complications such as bronchitis, bronchopneumonia and pulmonary collapse, have not had a high incidence in these cases; rather have they occurred less frequently than amongst cases operated on during the same period under general anæsthesia (usually open ether).

I wonder whether Dr. Morgan makes this statement as a result of personal observation.

Yours, etc.,

J. A. Parkes.

1, Mary Street,
Leichhardt,
September 15, 1942.

Post-Graduate Work.

WEEK-END COURSE AT NEWCASTLE.

The New South Wales Post-Graduate Committee in Medicine announces that, in conjunction with the Central Northern Medical Association, it will hold a week-end course at Newcastle on October 10 and 11, 1942. The programme of the course is as follows:

Saturday, October 10.

11.15 a.m.—Registration and Opening of Course, by Major-General R. M. Downes, C.M.G., V.D., Director of Medical Services, Second Army.
1.45 p.m.—"Cerebro-Spinal Meningitis", by Lieutenant-Colonel L. F. Dods.
2 p.m.—"Wound Healing, with Special Reference to the Choice of Suture Materials", by Captain E. T. Newell.
3 p.m.—"Recent Trends in the Study of Arterial Hypertension", by Lieutenant-Colonel J. Borderly, United States Army.
4 p.m.—"Malaria", by Lieutenant-Colonel L. F. Dods.

Sunday, October 11.

9 a.m.—"Compound Fractures", by Lieutenant-Colonel R. Graham.
10 a.m.—"Renal Failure Caused by Various Therapeutic Agents", by Lieutenant-Colonel J. Borderly.
11 a.m.—"Head and Chest Injuries in Warfare", by Major D. Miller.
12 noon.—"Experiences in Military Surgery", by Lieutenant-Colonel R. Graham.
2 p.m.—"Diseases of the Thyreoid from the Surgical Viewpoint", by Captain E. T. Newell.
3 p.m.—"Shock and Blood and Serum Transfusions", by Major D. Miller.

The fee for the course will be £1 1s. Those intending to be present at the course are requested to notify Dr. O. J. Ellis, Honorary Secretary, Central Northern Medical Association, Newcastle, as soon as possible.

Naval, Military and Air Force.

APPOINTMENTS.

The undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Number 251, of September 17, 1942.

Naval Forces of the Commonwealth.

Citizen Naval Forces of the Commonwealth.

Royal Australian Naval Reserve.

Appointment.—Stewart Horton Delbridge Preston is appointed Surgeon Lieutenant, dated 28th July, 1942.

Royal Australian Air Force.

Citizen Air Force: Medical Branch.

The following temporary Squadron Leaders are granted the acting rank of Wing Commander whilst occupying Wing Commander posts with effect from dates indicated: N. E. H. Box (1172), 6th August, 1942, I. G. McLean (1178), C. G. H. Blakemore (1180), H. S. Kirkland (1181), R. L. T. Grant (1185), I. B. Jose (1851), L. E. Hurley (2075), A. J. H. Stobo (2100), T. A'B. Travers (1269), E. M. Fisher (2056), 3rd August, 1942.

Flight Lieutenant A. E. Khan (2061) is granted the acting rank of Squadron Leader whilst occupying a Squadron Leader post with effect from 5th August, 1942.

The following Temporary Squadron Leaders are promoted to Temporary Wing Commanders, with effect from 1st April, 1942: N. E. H. Box (1172), (Acting Wing Commander) C. H. Hembrow (1184), R. L. T. Grant (1185), I. B. Jose (1851).

The following Flight Lieutenants are promoted to Temporary Squadron Leaders, with effect from 1st April, 1942: F. I. Wootten (1198), (Acting Squadron Leaders) M. J. Barrett (1241), R. T. McCaul (1252), N. E. Allen (1248), A. J. W. Ahern (1884).

The following Flying Officers are promoted to Temporary Flight Lieutenants, with effect from 1st April, 1942: (Acting Flight Lieutenants) J. P. Esslemont (1865), C. O. Duffy (1682), D. P. Felton (1744).

CASUALTIES.

According to the casualty list received on September 22, 1942, Captain A. B. Hogan, A.A.M.C., Newcastle, New South Wales, is reported to have been wounded in action.

Obituary.

WILLIAM SYDNEY PAGE.

We regret to announce the death of Dr. William Sydney Page, which occurred on September 8, 1942, at Brisbane, Queensland.

GEORGE METCALFE SHARPE.

We regret to announce the death of Dr. George Metcalfe Sharpe, which occurred on September 18, 1942, at Shorncliffe, Queensland.

Nominations and Elections.

The undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Rowlands, Thomas Neville, M.B., B.S., 1940 (Univ. Sydney), Holbrook.

Byers, Kevin John, M.B., 1941 (Univ. Sydney), Lewisham Hospital, Lewisham.

Clifton-Smith, Geoffrey, M.B., B.S., 1942 (Univ. Sydney), Saint Vincent's Hospital, Darlinghurst.

Medical Appointments.

Dr. Karl Francis Edwards has been appointed Deputy Superintendent, Northfield Mental Hospital, South Australia.

Dr. Philip Sydney Eyles and Dr. William James Betts have been appointed Resident Medical Officers at the Royal Adelaide Hospital, South Australia.

Dr. James Henry Russell Tremayne has been appointed a member of the Indeterminate Sentences Board, in accordance with the provisions of the *Indeterminate Sentences Act*, 1921, of Tasmania.

Dr. B. Hiller has been appointed, as a Government nominee, to the Board of Management of the Tasmanian Institution for the Blind, Deaf and Dumb, for twelve months from September 10, 1942.

Dr. Leslie Algernon Ivan Maxwell has been appointed a Member of the Food Standards Committee of Victoria.

According to the provisions of *The Public Service Acts*, 1922 to 1924, of Queensland, Dr. Norman Gregory Joseph Behan has been appointed a junior medical officer on probation in the Department of Health and Home Affairs for a period of twelve months.

Dr. Albert Raphael Phillips has been appointed, pursuant to the provisions of the Victorian Lunacy Acts, to be superintendent (acting) of the Mental Hospital and Receiving House, Royal Park, Victoria, from September 14, 1942, during the absence on leave of Dr. Grantley Alan Wright.

Books Received.

"After-Treatment: A Guide to General-Practitioners, House-Officers, Ward-Sisters and Dressers in the Care of Patients after Operation", by H. J. B. Atkins, D.M., M.Ch. (Oxon), F.R.C.S. (England); 1942. Oxford: Blackwell Scientific Publications, Limited. Medium 8vo, pp. 268, with 47 illustrations. Price: 15s. net.

"The Philosophy of Love", by Dallas Kenmare; 1942. London: Williams and Norgate, Limited. Crown 8vo, pp. 224. Price: 7s. 6d. net.

"Pathology and Treatment of War Wounds", by Sir Almroth E. Wright, M.D., F.R.S.; 1942. London: William Heinemann, Medical Books, Limited. Crown 4to, pp. 216, with illustrations. Price: 21s. net.

"The Ophthalmic Formulary", compiled by G. Griffin Lewis, M.D., F.A.C.S.; 1942. Springfield: Charles C. Thomas. 7" x 4", pp. 180.

"Materia Medica for Nurses", by A. Muir Crawford, M.D., F.R.F.P.S.G.; Fifth Edition; 1942. London: H. K. Lewis and Company Limited. Crown 8vo, pp. 148. Price: 4s. 6d. net.

"Nutrition and Chemical Growth in Childhood", Volume I, Evaluation, by Icie G. Macy, Ph.D., with a foreword by Hugo A. Freund, M.D.; 1942. Springfield: Charles C. Thomas. Royal 8vo, pp. 462, with 66 illustrations.

"Clinical Atlas of Blood Diseases", by A. Piney, M.D., M.R.C.P., and Stanley Wyard, M.D., F.R.C.P.; Fifth Edition; 1942. London: J. and A. Churchill Limited. 8" x 5", pp. 162 with 43 coloured plates and 3 illustrations. Price: 16s. net.

"The Practice of Local Anæsthesia", by George Bankoff, M.D., D.Ch., F.R.F.P.S.; 1942. London: William Heinemann, Medical Books, Limited. 8¼" x 5¼", pp. 199 with 121 illustrations. Price: 17s. 6d. net.

"Edinburgh Post-Graduate Lectures in Medicine", Volume II, 1940-1941, by various authors; 1942. Edinburgh: Oliver and Boyd, Limited. 9¼" x 6¼", pp. 551, with illustrations. Price: 12s. 6d. net.

Diary for the Month.

Oct. 6.—New South Wales Branch, B.M.A.: Council Quarterly.
Oct. 7.—Western Australian Branch, B.M.A.: Council.
Oct. 9.—Queensland Branch, B.M.A.: Council.
Oct. 13.—Tasmanian Branch, B.M.A.: Branch.
Oct. 13.—New South Wales Branch, B.M.A.: Executive and Finance Committee, Organization and Science Committee.
Oct. 20.—New South Wales Branch, B.M.A.: Ethics Committee.
Oct. 21.—Western Australian Branch, B.M.A.: Branch.
Oct. 22.—New South Wales Branch, B.M.A.: Clinical Meeting.
Oct. 23.—Queensland Branch, B.M.A.: Council.
Oct. 27.—New South Wales Branch, B.M.A.: Medical Politics Committee.
Oct. 29.—New South Wales Branch, B.M.A.: Branch.
Oct. 29.—South Australian Branch, B.M.A.: Branch.
Oct. 30.—Tasmanian Branch, B.M.A.: Council.
Nov. 3.—New South Wales Branch, B.M.A.: Organization and Science Committee.
Nov. 4.—Western Australian Branch, B.M.A.: Council.
Nov. 5.—South Australian Branch, B.M.A.: Council.
Nov. 6.—Queensland Branch, B.M.A.: Branch.
Nov. 10.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
Nov. 10.—Tasmanian Branch, B.M.A.: Branch.
Nov. 13.—Queensland Branch, B.M.A.: Council.
Nov. 17.—New South Wales Branch, B.M.A.: Ethics Committee.
Nov. 18.—Western Australian Branch, B.M.A.: Branch.
Nov. 19.—New South Wales Branch, B.M.A.: Clinical Meeting.

Medical Appointments: Important Notice.

Medical practitioners are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phœnix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia.

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